FOR RICHER FIELDS

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.S. Agency Sees ecord Chemical ales in 1955

Gain in Fertilizer, Pesticide Use Seen by Commerce Department

WASHINGTON—An all-time high sales of chemicals and allied prodcts is predicted for 1955 by the anuary report of the Chemical and ubber Division, Business and Dense Services Adm., U.S. Departent of Commerce. Present indicaons are that both production and les this year should top those of 954 by 4%, reaching a total of $21 illion.

The report also says that capital outlays for new plant and equipment by chemical companies in 1955 will approximate $1.2 billion, only slightly below the record outlay of 1954.

Among the chemical industry prodcts expected to achieve new highs his year are:

Elemental sulfur and sulfuric acid –Record production of 6 million long ons and 14 million short tons, repectively.

Chlorine—Normal growth in de-

(Continued on page 21)

Korean Fertilizer Bids to Be Opened

WASHINGTON—On Feb. 22 Korean buying agency will open bids on 17.5 million of fertilizer materials or that nation. It is now understood hat U.S. export interests have composed a barter arrangement in which U.S. agricultural surpluses, probably wheat, will be used as the base of ome U.S. bidding.

Procurement of the fertilizer is pen to world-wide offers except iron urtain nations. Requirements of the Korean procurement center on nitrogenous materials.

USDA Advisory Group to Study Bushelage Controls on Wheat

By JOHN CIPPERLY
Croplife Washington Correspondent

WASHINGTON—In a surprise about-face last week the U.S. Department of Agriculture gave official recognition to bushelage control over wheat as compared with production controls now exerted through acreage allotments.

This condition was disclosed when Ezra Taft Benson, secretary of agriculture, announced that he was asking the USDA National Agricultural Advisory Commission to consider the comparative merits of establishing controls on a bushel as compared with an acreage basis.

Subsequently it was learned within USDA that officials at the operating level had objected to the inclusion of this request in the Benson statement, but they appear to have been overruled.

It must be noted that Sec. Benson merely asks his national advisory group to look into any possible merits of a bushelage control basis for wheat. Nevertheless, it is the first time that this administration has given lip service to this proposal.

Many months ago Croplife checked reports that this plan was a possible alternative method to control wheat production, and at that time prominent Commodity Stabilization Service officials rejected it out of hand saying in effect that it would penalize efficient producers of wheat who adopted and followed scientific practices such as adequate use of plant food.

Adoption of a bushel basis for wheat crop production would connote serious consequences to the plant food industry and reverse the position previously taken by most all of the top staff of USDA, including the secretary himself.

Immediately following news of the secretary's request to his national commission, Charles Shuman, new leader of the American Farm Bureau Federation, took issue with this request and placed the big farm organization in opposition to any control of this type. Mr. Shuman advocated flexible price supports and acreage controls as the currently best instrument available.

Trade sources here declined to issue any public comment but admitted surprise over the secretary's announcement, noting that it constituted a reversal of his previous position advocating the maximum efficiency in farming practices.

As recently as two weeks ago, speaking before the Kentucky Farm and Home week at Lexington, True D. Morse, undersecretary of agri-

(Continued on page 20)

Work Starts on Brea Ammonium Nitrate Plant

LOS ANGELES—Construction was started last week on an ammonium nitrate plant to be operated by Brea Chemicals, Inc., subsidiary of Union Oil Company of California, it was announced by Homer Reed, Brea president.

The new plant, representing an investment in excess of $2 million, will be located on a 7½-acre site adjacent to the Brea ammonia

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IMC Expands Potassium Sulfate Producing Facilities

CHICAGO—International Minerals & Chemical Corp. is expanding its potassium sulfate producing facilities at Carlsbad, N.M., A. Norman Into, vice president of the Potash Division, announced Feb. 17.

This latest increase in production will boost output of potassium sulfate by 40,000 tons per year to 150,000 tons annually. Construction has already started, and increased capacity will be available during the coming fertilizer contract year beginning June 1.

International completed a similar increase in potassium sulfate facilities at Carlsbad in February of last year. At that time design work was done for this latest increase. Plans have already been made for another similar increase in capacity as the market demand grows, Mr. Into stated.

Stauffer Opens New Insecticide Plant in Texas

NEW YORK — Stauffer Chemical Co., New York, has completed a modern insecticide and fungicide blending plant at Lubbock, Texas. The new plant, serving Western Texas and New Mexico, is another phase of the company program to provide pesticide blending facilities in the major crop areas, the firm said. The plant replaces Stauffer warehouse facilities established three years ago in the same area.

The new plant facilities are located on a five acre plot adjoining the Santa Fe Railroad. The new building will also house Stauffer regional sales offices. The facilities include 12,000 sq. ft. warehousing capacity.

Stauffer Chemical Co., in addition to the new pesticide plant at Lubbock, operates insecticide plants in the South area at Houston, Texas; Weslaco, Texas; Harvey, La.; North Little Rock, Ark., and Apopka, Fla.

Industrial, Agricultural Chemical Production Rises in December

WASHINGTON—December output of several important industrial and agricultural chemicals were considerably greater than that of the preceding month, according to a preliminary report just issued by the U.S. Department of Commerce, Bureau of the Census.

Anhydrous ammonia production led the list with an increase of 6% over the previous month. December's output was 253,687 tons as compared to 238,463 tons for November.

The following table gives details on NH_3 production and a number of other chemicals. Figures are given in short tons:

	Dec.	Nov.	Percent change
Ammonia, synthetic anhydrous	253,687	238,463	+6
Ammonium nitrate, original solution (100% NH_4NO_3)	183,915	179,207	+3
Nitric acid (100% HNO_3)	199,140	193,343	+3
Phosphoric acid (50% H_3PO_4)	261,154	257,550	+1
Sulfuric acid (100% H_2SO_4) (gross)	1,299,530	1,254,778	+4

Farm Efficiency Will Prevent Food Shortages, NFA Officer Says at Tennessee Meetings

KNOXVILLE—About 350 Tennessee fertilizer and seed dealers and professional agricultural workers attended and participated in meetings at Nashville, Jackson and Knoxville, Feb. 8, 9 and 11, sponsored by the University of Tennessee.

Several speakers from fertilizer and seed industries, government and professional agencies, and the University of Tennessee, College of Agriculture, discussed production, distribution and use of, and 1955 outlook for fertilizer and seed.

W. R. Allstetter, vice president of the National Fertilizer Assn., said that Americans need have no fear of food shortages in the foreseeable future. Attacking those who fear that the nation's farm plant will not be able to keep pace with the increasing population, Mr. Allstetter stated: "I have no doubt of the capacity of American agriculture to produce enough food for us, our children and our children's children."

Mr. Allstetter quoted from studies conducted by the University of Tennessee to show that Tennessee farmers, by using recommended additional amounts of fertilizer along with a

(Continued on page 20)

Inside You'll Find

Lion Oil Sales at Record High, Net Income Increases

EL DORADO, ARK.—Net income of Lion Oil Co. for 1954 after all charges was $11,071,426 or $3.58 per share, T. M. Martin, president, announced recently.

This represents an increase of 3.6% over the $10,688,260 or $3.46 per share earned in 1953. Sales and operating revenues for the year reached a new high of $98,584,798 as compared with $89,959,405 for the previous year.

The annual report of the company with detailed results for the year 1954 will be distributed in March, Mr. Martin said.

Grace Announces Aid Program for Nitrogen Research

NEW YORK—A grant-in-aid program for research in nitrogen plant foods and animal feeds was announced recently by Grace Chemical Co.

William P. Gage, company president, said the program would support both fundamental and applied research in two major fields: nitrogen nutrition of ruminant animals, and soil reactions and crop use of nitrogen fertilizers.

For the current academic year a total of $20,000 has been allocated to the research funds of seven land grant colleges and experiment stations, according to Mr. Gage, who declared, "It is our hope that the stimulation of new research through these grants-in-aid will mean more efficient and more profitable levels of agricultural production."

Named to Committee

SACRAMENTO — Charles Branstetter, Jr., retiring president of the California Agricultural Aircraft Assn., has been named to the Western Weed Control Conference Industrial Committee.

Joe L. Kirk

Joe L. Kirk to Head Douglas Chemical Sales, Advertising

KANSAS CITY—The appointment of Joe L. Kirk, former vice president of Carman & Co., to the newly created post of director of sales and advertising for the Douglas Chemical Co., has been announced by W. C. McCaslin, executive vice president.

Douglas Chemical Co., manufacturers of fumigants, insecticides and agricultural chemicals, has executive and headquarter offices in North Kansas City, Mo.

Scientists Report Yield Increases From Antibiotic

WASHINGTON—Three plant scientists reported Feb. 16 that vegetable crops treated with Agri-mycin, a spray combination of the antibiotics Terramycin and Streptomycin, showed an increase in yield of up to 67% over untreated crops.

The scientists—Dr. Robert A. Conover, Dr. R. S. Cox and Dr. Donald M. Coe, all of the University of Florida—told the annual mid-winter workshop session of the Vegetable Growers Association of America that the antibiotic combination was successfully used to treat two bacterial crop diseases. The increased yield in treated plots was noticed at harvest time, they said.

Two of the scientists, Dr. Conover and Dr. Coe, also reported that fruit size was increased in tomato plants treated with the Terramycin - Streptomycin spray. Dr. Conover found an increase in fruit size of 10.6% in treated plots, while Mr. Coe reported an increase of 28%.

Dr. Cox, who conducts research in plant pathology at the Everglades Experiment Station, Belle Glade, Fla., reported on the successful control of bacterial spot of peppers—an $18 million crop. He said that yields in the antibiotic-treated plots increased as much as 67% over non-treated plots.

Dr. Conover, plant pathologist at the Sub-Tropical Experiment Station, Homestead, Fla., reported treating 10 acres of tomatoes with Agri-mycin for bacterial spot and getting "excellent control." In addition, plots treated with the antibiotic spray combination showed increases of up to 154 bu. an acre.

Dr. Conover reported that "Tomatoes which received no treatment averaged 400 bu. per acre, while those treated with Agri-mycin at the rate of 100 parts of the antibiotic formula to each million parts of water, yielded 488 bu. When the antibiotic concentration was increased to 200 parts per million, the yield jumped to 554 bu. per acre."

In his report, Dr. Coe, assistant plant pathologist at the Indian River Field Laboratory, Fort Pierce, Fla., said that tomatoes treated with Agri-mycin for bacterial spot showed an increased yield of 42%, as well as an increased fruit size of 28%.

The scientists did not speculate on whether the increased yield and fruit size were due merely to the successful control of the disease—or whether they were caused by the direct action of the antibiotics.

Agri-mycin, developed and produced by Chas. Pfizer & Co., Inc., Brooklyn, N.Y., has been field tested for three years by U.S. Department of Agriculture, land grant college and state department of agriculture stations.

The three scientists reported at a luncheon honoring the Vegetable Growers Association of America at the Raleigh Hotel in Washington, which was sponsored by the Pfizer company.

In Plant Pest Post

NEW HAVEN, CONN. — The appointment of W. T. Brigham to the post in charge of all pest regulatory and inspection work in Connecticut has been announced by Dr. James G. Horsfall, director of the Connecticut Agricultural Experiment Station. Mr. Brigham will succeed Max P. Zappe, who is requesting his retirement on April 1. The appointment of Mr. Brigham, a long-time member of the Connecticut Station staff, will be effective on the same date.

W. Fred Cherry Named Head Of Colorado Pesticide Group

DENVER—Members of the Colorado Agricultural Chemicals Assn., more than 100 strong, met here Jan. 28 for the group's fourth annual meeting. W. Fred Cherry, Agricultural and Sanitary Chemical Dept., Rohm & Haas Co. was elected president of the association; Ralph Farr, Greeley, Colo., vice president, and Orval Schall, Monte Vista, Colo., secretary-treasurer.

In addition to the three officers, two additional men were elected to the association's board. They were E. C. Stone and R. F. Bowman, who with the three officers, comprise the group's governing board.

The meeting program covered many phases of insecticides, herbicides and fungicides, with speakers representing the Colorado Agricultural Experiment Station and the manufacturing industry.

Paul W. Swisher, Colorado Commissioner of Agriculture was chairman of the afternoon session of the CACA clearing committee. Changes in the pesticide recommendations for 1955 were reviewed by the insecticide sub-committee, Gordon Mickle, chairman; while the plant disease control recommendations for 1955 were discussed by Jack Henderson, Colorado A&M extension plant pathologist.

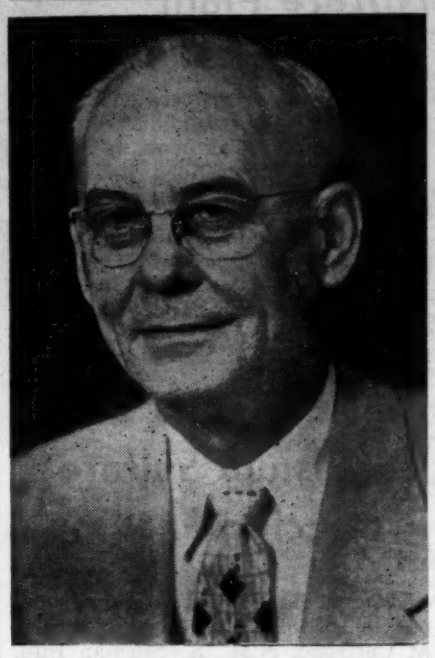
Against fire blight of apples and pears, new spray materials recommended on a field test basis in 195 included both Streptomycin and Terramycin. When trees are in 10 bloom, full bloom and at calyx, 1 ppm Streptomycin was suggested. When five applications are made, ppm Streptomycin is indicated.

Streptomycin 90% plus Terramycin 10% was likewise recommended as an alternate spray. Rates of application were the same as Streptomycin alone.

Bruce Thornton and Dr. Jess L. Fults, head of Botany and Plant Pathology Dept., Colorado A&M, presented to the association new developments in present day herbicides, a supplement to the 1954 report.

Mr. Thornton emphasized the point that a certain amount of precipitation was essential to the functioning of soil sterilants.

Dr. Fults said experiments with Crag Herbicide-1 resulted in excellent crabgrass control in bluegrass lawns, if applied every 3 or 4 weeks in the spring.



Dr. I. Bergsteinsson

Dr. I. Bergsteinsson Named to Brea Market Development Post

LOS ANGELES — Dr. I. Bergsteinsson has been appointed senior market research and development engineer for Brea Chemicals, Inc., subsidiary of the Union Oil Company of California, it was announced recently by Ronald L. Clark, Brea supervisor of market research and development.

Formerly senior research chemist for the Union Oil Co., where he has served for the past 10 years, Dr. Bergsteinsson will undertake studies and analyses of chemical markets for new products developed by Brea's Research Department.

He will specialize in studies of West Coast markets for Brea's industrial products, which now include aqua and anhydrous ammonia, dry ice, liquid CO_2, ethyl and methyl mercaptans and sulfur.

Born in Canada, Dr. Bergsteinsson received his bachelor of science degree in 1929 and his master's degree in 1931 from the University of Saskatchewan. He was awarded his Ph.D. from Stanford University in 1934.

From 1934 to 1942, he was employed as a senior chemist for the Shell Development Co. in Emeryville, Cal. He was a director of research for the Yale Oil Co. in Billings, Mont., from 1942 to 1944. In 1944, he joined the Union Oil Co. and served as a chemical market analyst and senior research chemist until his recent appointment with Brea Chemicals.

Durham Announces Personnel Changes, New Distributorship

LOS ANGELES — Personnel changes in its Southern California home office and acquisition of a new distributorship for its subsidiary corporation in Mexico were announced recently by Wallace Durham, president of Durham Chemical Co., 4124 E. Pacific Way, Los Angeles.

Earle Stevens was made vice president and general manager of Durham Chemical Co., effective immediately. Mr. Stevens joined the company in 1946, following active service with the U.S. Marine Corps.

Fred DeGraw has been hired to handle the South California sales territory formerly taken care of by Mr. Stevens. For the past six years Mr. McGraw was associated with International Minerals & Chemical Corp., selling out of Chicago to the feed trade of the Midwest.

O. T. Coffin continues as head of the Research and Entomological Dept. of Durham Chemical Co. He will also serve as chief consultant for field crops in the Southern California area. Mr. Coffin was fomerly an entomologist with the California Department of Agriculture and the U.S. Department of Agriculture.

Mr. Durham's announcement of the new distributorship disclosed that the firm's Mexican affiliate, Quimica Agricola del Pacifico, Mexicali, has been appointed by Brea Chemical Co. to distribute the chemical fertilizers aqua ammonia and ammonium phosphate in Baja, Cal.

Mr. Durham also revealed that the subsidiary is expanding its insecticide branch, and is buying land in Hermosillo for a warehouse and office to service increasing business in the Sonora area.

VERMONT YIELD REPORTED

BURLINGTON, VT. — Vermont farmers increased production of milk, eggs, maple and hay during 1954 while producing fewer apples, potatoes and grains, reports Dr. Thurston Adams, Vermont agricultural economist.

NEW NFA BOOK—Ezra Taft Benson, secretary of agriculture, left, above, gets some tips on "The Care and Feeding of Garden Plants" from Dr. Russell Coleman, president of the National Fertilizer Assn. The occasion was a presentation to the secretary, by Dr. Coleman, of an engraved personal copy of a new book by that name just published by NFA and the American Society for Horticultural Science. The book, first of its kind for home and commercial gardeners, describes plant nutrition and feeding. It contains numerous full color illustrations which show gardeners how to recognize hunger signs in their house and garden plants and tells how to correct them. "The Care and Feeding of Garden Plants" will soon be available from bookstores and garden supply dealers.

12 Colleges Represented at Soil Conference

COLUMBIA, MO.—Thirteen representatives of 12 North Central agricultural colleges were in session on the University of Missouri Campus Jan. 17-18 for the Annual North Central Regional Soil Survey Conference, according to H. H. Krusekopf, professor of soils at the University of Missouri.

The agronomists and soil surveyors were meeting to discuss the preparation of a regional soil map and soil key as relating to soil classification in the 12-state area.

The meeting place of the Soil Survey Conference is rotated among the 12 agricultural colleges participating. Nic Holowaychuk, of the Ohio State University Agronomy Department, is president of the soil survey group.

After their meeting concluded Jan. 18, those attending the conference met with regional Soil Conservation Service representatives for three days. During this time, the entire group held a workshop to discuss methods of soil classification, ways of increasing use of soil surveys and the matter of making soil classifications uniform throughout the 12-state area.

The SCS meeting attracted about 30 regional and national SCS representatives in addition to the representatives attending the Soil Survey Conference, Mr. Krusekopf said.

R. D. Hockensmith, chief of the North Central Regional SCS, and Roy Sinonson, chief SCS correlator, both of Washington, were among the visitors during the final three days.

The annual business meeting and election of officers for the North Central Soil Survey group will be held in June at the meeting of the American Society of Agronomy to be held at Iowa State College, Ames.

Du Pont Adds Three To Garden Sales Force

WILMINGTON—Three men have been added to the Du Pont garden chemicals sales force and two new sales territories for this line are being opened. For two of the three men, this will be their first Du Pont assignment, while the third, Bernard A. McCabe, has been transferred from the company's Fabrics and Finishes Dept. to the garden section of the Grasselli Chemicals Dept.

The two men are Clinton B. Harris, Jr., who comes to Du Pont from Clinton, Iowa, and Gordon P. Robinson of Baltimore. Also affected in the changes is Frank J. Winstel, who is being transferred from Cleveland to a new territory in Cincinnati.

Mr. Harris is being assigned to the Greater Cleveland area, and the Lake Shore area of western New York. Mr. Robinson, who will be located in St. Louis will handle the newly designated territory of Missouri, eastern Kansas and southern Illinois. Mr. McCabe will cover northern New Jersey, northeastern Pennsylvania, and the bordering area of southeastern New York.

Montrose Offers DDVP For Experimental Use

NEW YORK—Montrose Chemical Co., Newark, N.J., is now producing dimethyl - dichloro vinyl phosphate (DDVP) on a pilot plant scale and offering it for experimental purposes to properly qualified organizations.

DDVP, which has not as yet been approved for commercial use, was recently announced by Mrs. Oveta Culp Hobby, secretary of health, education and welfare, as a new insecticide. It was discovered by Dr. George W. Pearce, chief of the Chemical Section of the Savannah, Ga., Communicable Disease Center. (See page 1 of the Feb. 14 issue of Croplife.)

IN NEW MONSANTO POST

ST. LOUIS—Charles L. Grisham of Springfield, Mass., has transferred to the advertising and sales promotion department of Monsanto Chemical Co.'s Organic Chemicals Diviison here, it was announced recently by John L. Hammer, Jr., director of marketing.

INSECT AND PLANT DISEASE NOTES

Corn Borer Continued Movement Into New Areas During 1954, USDA Reports

WASHINGTON — Corn borer in 1954 continued to spread into new counties in the 37 states where it now is known to be present, according to survey data compiled recently by Leo G. K. Iverson, U.S. Department of Agriculture entomologist. Additional counties reporting corn borer for the first time, were in the states of Arkansas, North Dakota, Oklahoma, South Dakota, Virginia, West Virginia and Missouri.

The surveys for corn borer were conducted after mid-September, 1954, thereby including the fall population of the pest. Twenty-five states completed surveys in 1954 gathering data over an area representing 608 counties. The survey was not as intensive as in past years, with several states reducing the number of counties surveyed and making surveys on a district rather than a county basis.

A tremendous buildup of corn borer populations over 1953 was recorded in the 1954 survey. Large areas through central Iowa, northeastern Nebraska and southeastern South Dakota had infestations in excess of 500 borers per hundred stalks in the fall of 1954. Several counties in central Illinois were in the same category. In most counties adjacent to this high population, counts averaged between 300 and 500 borers per 100 stalks. The remainder of the country had populations very similar to or lower than those of last year.

In the states grouped together in this report and designated as Eastern United States, a substantial decrease in the average population level occurred from 1953 to 1954. In 1954, the average number of borers was 33 against 65 per 100 plants in 1953. Only a few of the counties surveyed had populations over 100 borers per 100 plants in this entire area. In every state in this group, lower average borer counts were recorded, except Massachusetts and New Hampshire.

In the North Central States, the average number of borers per 100 plants continued to increase. (See map below.) An average of 223 borers per 100 plants was found in 1954 compared with 114 for 1953. All states in this group showed an appreciable increase except Kansas, Kentucky, Minnesota, North Dakota and Wisconsin.

Iowa reported the heaviest infestation with an average of 497 borers per 100 plants. Seventy-four counties from this area had populations over 500 borers per 100 plants compared with 11 in this category in 1953.

For the entire area of the United States known to be infested with European corn borer, based on comparable counties surveyed during 1953 and 1954, the average number of borers per 100 plants increased from 104 in 1953 to 186 in 1954.

South Carolina Reports Insects, Plant Diseases

CLEMSON, S.C. — Both plant diseases and insects are noted in mid-February reports from South Carolina. Rootknot nematode has been found infesting the Allendale-Barnwell area, varying from moderate to severe in damage done. Infestation was found in all orchards checked, where peach trees were on rootknot susceptible root-stock.

Investigations on vegetables in the Charleston area indicated general but light infestations of cabbage aphid; moderate to heavy infestations of turnip aphid on kale and turnips and in some plantings of young cabbage. Green peach aphid was abundant on spinach and in smaller numbers on cabbage. Considerable injury to turnips and spinach was reported because of the vegetable weevil.

Entomologists in South Carolina warned growers that the tomato russet mite is present in the state. It was first located in November. No infestation has developed, but a watchful eye will be kept on developments.

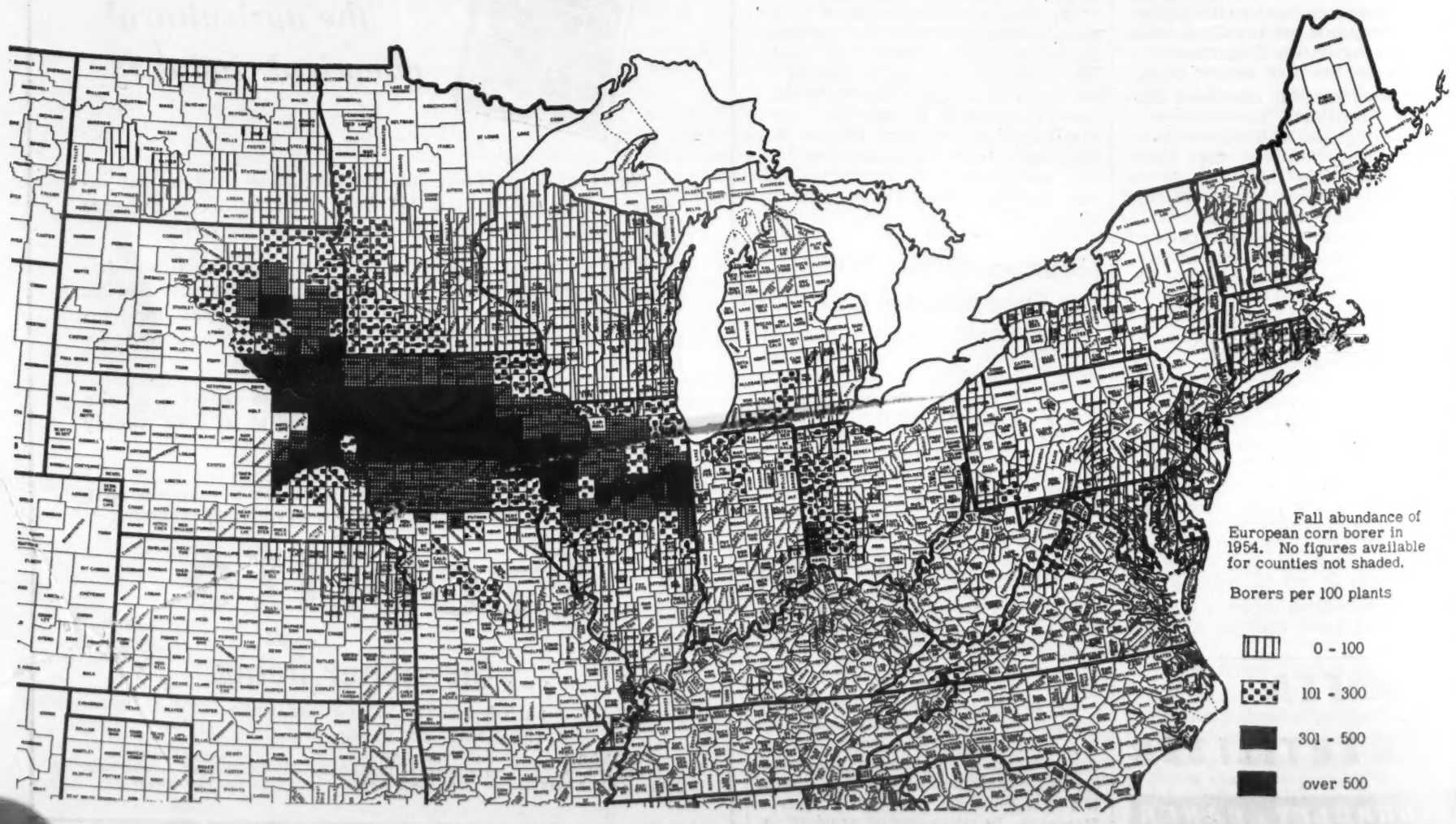
A barley field in Greenwood which showed rather severe seedling blight in December, now shows spot blotch disease to a limited extent on the leaves. A major contributing factor appears to be the depth of planting in the soil. Most of the plants that died were on dry soil where the drill had gone as much as four inches deep. "This was a major contributing cause of a seedling blight, even though barley has been planted on this field for several years," the report says.

CORN BORER POPULATION BY STATES

State—	1953 No. of counties surveyed	1953 Average No. of borers per 100 plants	1954 No. of counties surveyed	1954 Average No. of borers per 100 plants	Counties surveyed both years No. of counties	Borers per 100 plants 1953	Borers per 100 plants 1954
Eastern U.S.—							
Connecticut	8	18	8	8	8	18	8
Delaware	3	181	3	60	3	181	60
Maine	9	37	..	..	..	..	..
Maryland	23	99	23	41	23	99	41
Massachusetts	1	3	1	4	1	3	4
New Hampshire	8	23	7	46	7	18	46
New Jersey	12	59	12	28	12	59	28
New York	17	35	19	17	15	37	19
Pennsylvania	36	46	29	19	26	48	20
Rhode Island	4	107	4	43	4	107	43
Vermont	10	7	5	4	5	6	4
Virginia	8	155	7	123	7	176	125
West Virginia	3	36	3	13	3	36	13
Total	142		121		114		
Average†						65	33
N. Cent. States—							
Illinois	51	133	44	215	44	196	215
Indiana	31	62	20	102	18	75	96
Iowa	99	163	*12	497	*12	173	497
Kansas	20	44	25	26	20	44	30
Kentucky	25	93	7	52	7	104	52
Michigan	12	11	**3	69	**3	11	69
Minnesota	79	64	65	72	65	77	72
Missouri	43	51	24	148	18	75	169
Nebraska	51	91	33	353	32	116	350
North Dakota	39	15	21	26	16	31	32
Ohio	33	62	30	153	30	62	153
South Dakota	40	258	41	394	40	257	399
Wisconsin	61	27	***8	28	***8	27	28
Total	584		487		467		
Average†						114	223
United States—							
Total	726		608		581		
Average†						104	186

†Weighted on basis of number of counties. *Reported as 12 districts representing 99 counties. **Reported as 3 districts representing 17 counties. ***Reported as 8 districts representing 61 counties.

FALL ABUNDANCE OF CORN BORER IN 1954



HEAD OKLAHOMA GROUP—1955-56 officers of the Oklahoma Pest Control Assn., elected during the fifth annual meeting of the organization Feb. 7-9 on the Oklahoma A&M College campus are shown above. From left to right, they are Charles Rosenthal, Tulsa, president; W. J. Pinkston, Oklahoma City, vice president, and A. M. McIntosh, Tulsa, secretary-treasurer.

Charles Rosenthal Named by Oklahoma Pest Control Assn.

STILLWATER, OKLA. — Charles Rosenthal of Tulsa was elected president of the Oklahoma Pest Control Assn. in the closing sessions of the fifth annual conference of the group on the Oklahoma A&M college campus, Feb. 7-9.

Other new officers installed during the meeting were W. J. Pinkston, Oklahoma City, vice president, and A. M. McIntosh, Tulsa, secretary-treasurer.

During the three-day meeting, which featured talks by Harlem Ives, president of the National Pest Control Assn., and Dr. Ralph Heal, New York City, executive secretary of the same organization, pest control operators from all sections of Oklahoma had the opportunity to hear outstanding speakers in many phases of pest control.

Dr. Heal discussed anti-coagulants used in rodent control as well as various insecticides. He noted that dieldrin has been cleared recently by the Food and Drug Administration as a residual spray fly control for use in homes.

Dr. D. E. Howell, head of the Oklahoma A&M department of entomology, Stillwater, discussed fly control, noting that the resistance of flies to a number of pesticides has made it necessary to find additional toxicants for their control. He indicated that some of the new organic phosphate insecticides are now showing promise in cases where chlorinated hydrocarbons have become less potent.

Clyde L. Bowers, Oklahoma State Board of Agriculture entomologist described the state laws regarding registration and licensing, declaring that new provisions for enforcement "have teeth in them."

Public health through pest control was the subject of a talk by Clyde Eller, sanitary engineer of the Tulsa City-County health department. Since insects carry about one-third of all the communicable diseases which man suffers, control of these insects has greatly reduced such hazards. The speaker therefore credited the pest control operators with playing an important role in this direction.

Attending the combination conference-short course were some 135 state pest control operators. All the meetings were held in the Student Union at Oklahoma A&M.

Chlordane Household Labeling Is Relaxed

WASHINGTON—Revised instructions to relax limitation on strength of household type chlordane insecticides have been announced by USDA. Limitations on strength of formula permits a formula of 2.5% to 3% and from the present 5% for dry powder formulations to 6%.

The USDA said that this revision of instructions for labeling is based on chemical evidence that present manufacturing processes can eliminate from technical chlordane marketed for insecticidal uses, most of the hexachlorocyclopentadiene that formerly was present as an impurity in considerable amounts.

The action was taken on Interpretation 19 which relates to labeling of household insecticides containing chlordane under the Federal Insecticide, Fungicide and Rodenticide Act.

International Minerals Purchases Assets of Two Perlite Firms

CHICAGO—International Minerals & Chemical Corp. has purchased all of the assets of U.S. Mining Co. and Peerless Perlite Co., according to an announcement by Louis Ware, president. Both of these companies are of Los Angeles, and the assets include very large reserves of high quality perlite ore in Inyo County, California, a drying and grinding plant near Big Pine, Cal., and a perlite expanding plant in Los Angeles.

The properties will be operated by the Industrial Minerals Division of International Minerals & Chemical Corp., under the supervision of Norman J. Dunbeck, vice president.

California Adopts New Procedures for Sampling Fertilizers

SAN FRANCISCO—The California State Department of Agriculture has announced changes in its regulations concerning sampling procedures of commercial fertilizer materials.

According to the new regulations, which will go into effect Feb. 23, when material is packaged in containers of less than 10 lb., one package of the material may be taken as a sample to represent the lot of which it is a part. When the material is packaged in lots of 10-lb. or more, each official sample shall consist of at least one pound of material, taken in certain specified amounts, according to the new regulations.

The rule changes also provides for labeling the sample before removal, with the date, name of product, inspectors initials and sample number.

Illinois Firm

SPRINGFIELD, ILL.—The Indian Point Farm Supply Co. has been chartered here. Incorporators are J. Kennedy Kincaid, Jr., Loren E. Hopwood and Margaret G. Kincaid.

Use of Insecticides in Soil Application Emphasized at Oregon Chemical Conference

PORTLAND, ORE. — Improved techniques of soil treatment with chemical insecticides are showing great promise, but some of the newer bug-killers are making less headway in the fight against certain orchard pests, research scientists told a big three-way argicultural chemical conference here recently.

Several hundred growers, entomologists, industry representatives and others were present at various meetings of the annual Northwest Vegetable Insect Conference, the Western Cooperative Spray Project and the Pacific Northwest Chemical Industry Conference, held jointly.

Soil treatment is protecting potato, carrot, bean and other row-crop fields for periods up to six years, speakers said. Such treatment of potato plots in central Oregon has been so effective it has viftually eliminated damage from such pests as flea beetles, wireworms and spotted cucumber beetles. Oregon potato-grading houses are confirming this.

H. E. Morrison and H. H. Crowell, researchers from the Oregon Agricultural Experiment station at Corvallis, said the soil treatment technique is now well out of the experimental stage. Potato farmers in Oregon's Deschutes county saved $25,000 last year by such treatment, and in Malheur county some 3,000 acres of potato land were so treated during 1954.

On the basis of experiments begun in 1949, Oregon State College recommends the use of aldrin, dieldrin or heptachlor for control of soil insects. OSC research groups came up with some interesting results in studies of residues of various insecticides used in soil treatment.

The materials were rotary-tilled into the soil at the rate of 10 lb. an acre. Identity of the plots has been maintained and no additional insecticide has been applied since the original dosage. New plots have been added as new materials have become available.

In 1953, another series of plots was started, using low dosage rates. The results, summarized:

1. DDT at 10 lb. an acre has not given adequate control of flea beetle larvae, but has given good wireworm control for five years. It may be declining in effectiveness. At the end of the 1954 season it allowed 36% of the tubers to be damaged.

2. EPN and parathion at 10 lb. an acre: Inadequate protection after the first season.

3. Toxaphene at 10 lb. an acre: As good as DDT in wireworm control and appears to be persisting in the soil longer. Good flea beetle control for six years.

4. Chlordane at 10 lb. an acre: Excellent control of wireworms and flea beetles for six seasons. Some indication of declining effectiveness in last season.

5. BHC (10 lb. gamma an acre): control of wireworms and flea beetles for four years. Declined in fifth season and improved again in sixth. Changed flavor of tubers significantly 1949 to date.

6. Heptachlor at 10 lb. an acre: Studied only since 1951. Has given control of wireworm and flea beetle during that period. At dosages of 2 to 5 lb. an acre, has also given control for two years.

7. Aldrin and dieldrin at 10 lb. an acre: Perfect wireworm and flea beetle control for six years. Aldrin at 2 and 5 lb. and dieldrin at 2 lb. have given similar results for two years.

8. Endrin at 10 and 2 lb. an acre has given excellent control for two years.

9. Isodrin at 10 lb. an acre: protection for two years. At 2 lb., flea beetle control was excellent but slight wireworm damage was measured second year.

10. Lindane, regular and improved types at 1½ pounds per acre: Perfect control first year, with significant flavor change.

On the basis of experiments so far, OSC experts say the farmer may expect 2 lb. an acre dosages of aldrin, dieldrin and heptachlor to give him excellent protection from wireworms and flea beetles for two seasons. Because of differing soils and cultivating practices, however, the college is recommending treatment of the soil each time it is used for potato growing.

British Columbia experimenters told the conference they had come up with similar results in soil treatment. H. G. Fulton, of the Field Crop Insect Laboratory at Chilliwack, B.C., reported almost complete control of tuber flea beetle with aldrin and heptachlor dusts applied, broadcast, at 4 lb. actual toxicant an acre. The material was worked into the soil by mechanical tilling or hand-raking. The same materials gave good commercial control when applied in a six-inch band along the rows after the sprouts had appeared and raked into the soil at 2 lb. an acre.

F. L. Banham, of the Entomology Laboratory at Kamloops, B.C., reported that 1953 experiments showed practical control of tuber flea beetle with chlordane at 10 lb. an acre, aldrin at 4 lb. and dieldrin at 1½ lb. All showed from 70% to 86% marketable tubers, while check plots produced 35%.

Heptachlor emerged as the number one controller of wireworms in tests run by M. C. Lane and C. E. Woodworth, of the Walla Walla, Wash., station of the Agricultural Research Service. Their experiments also used aldrin, dieldrin and chlordane. The two scientists reported granular heptachlor was less effective than the dust form, however.

Western Cooperative Spray Conference meetings got under way with a series of apparently conflicting reports on the effectivenes of organic phosphates on certain orchard insects.

Some types of mites, especially, seem to be developing marked resistance to the organics, scientists told the chemical industry meeting.

One speaker, Louis G. Gentner, revealed that spider mite control is becoming more and more unpredictaable in the Rogue River Valley area, one of Oregon's most productive orchard regions.

In trials at the experiment station at Talent during the past year, all organic phosphates, including the systemics, failed to give commercial control of two-spotted mites. In past years systemic applications have given outstanding control.

Several non-phosphate materials also gave good control of the mites in the Rogue during 1954—notably aramite, chlorobenzilate, methyl chlorobenzilate and dimite.

Green peach aphid has become difficult to control with various organic-phosphate insecticides in several peach areas of north central Washington, other speakers reported.

Other researchers told the conference they could find no evidence in the field last year that the codling moth, prime pest of apples in the Northwest, is developing resistance to DDT, although there had been some laboratory evidence to that effect.

A streptomycin mixture will be used on a commercial basis in California this year to control fire blight in pears, the conference heard.

The entomologists, at their sessions, elected Arthur J. Walz, from the Idaho experiment station at Parma, chairman of next year's Vegetable Insect Conference. Sectional chairmen include Douglas Finlayson, Kamloops, B.C.; H. E. Morrison, Oregon State College, Corvallis; R. W. Portmand, University of Idaho, Moscow, Idaho; Horace Telford, Washington State College, Pullman, Wash.; Charles J. Doucette, Sumner, Wash., and Don R. Markley, University of Montana, Missoula.

College men elected Dr. L. C. Terriere, Oregon State College, and Dr. Rodney Sprague, Washington State College, as co-chairmen for next year's Western Cooperative Spray Conference. Eddie Turner, of California Spray Chemical Corp., was named chairman of the industry section of the meet.

California Fertilizer Group Sets Dates For Annual Meeting

SAN MARINO, CAL.—The 32nd annual convention of the California Fertilizer Assn. will be held at the Hotel Mark Hopkins, San Francisco, Nov. 7-8, 1955, B. H. Jones, president of the association has announced. Four hundred and fifty are expected to attend, including industry leaders and their ladies from all sections of the U.S. and Canada.

Mr. Jones said that the three convention committees, under the general chairmanship of W. G. Hewitt, Berkeley, are laying plans for two speakers of national renown, and an outstanding program of recreation. He pointed out that the hotel has set aside a limited number of rooms for the CFA convention and suggested that those who are planning to attend arrange with the hotel for the accommodations.

AT TEXAS CONFERENCE—The scenes above are from the recent Texas Fertilizer Conference, held at Texas A&M College, College Station. A report of the meeting appears on page 19 of the Jan. 17 issue of Croplife.

Top row—Left photo, Dr. J. Fielding Reed and Dr. N. D. Morgan, both with American Potash Institute; at right, P. F. Schowengerdt, Olin Mathieson Chemical Corp., Little Rock, Dr. Russell Coleman, president of the National Fertilizer Assn., Washington, Joe Mullen, Olin Mathieson Chemical Corp., Little Rock, and Dr. Reed.

Second row—Left photo, G. G. Scott, Lion Oil Co., New Orleans, and Tom Wright, Farm Products Co., Nacogdoches, Texas; right photo, John Frahm, Arkell & Smiths, and B. L. Henderson, Campbell Fertilizer Co., Houston, president of the Texas Plant Food Educational Society.

Third row—Left photo, Dean Smith, Hi Yield Fertilizer Co., Bonham, Texas, W. Q. Burns, International Minerals & Chemical Corp., and Dr. W. H. Garman, American Plant Food Chemical, Washington; right photo, C. D. Shallenberger, Shreveport (La.) Fertilizer Works, and Dr. J. E. Adams, head, Dept, of Agronomy, Texas A&M.

Fourth row—Left photo, Sherman W. Clark, Texas Gulf Sulphur Co., Houston, Walter Young, Hi Yield Fertilizer Co., Mt. Pleasant, Texas, and Dean Smith; right photo, Harold Trammell, Farmers Fertilizer Co., Texarkana, and J. T. Carlisle, Jacksonville (Texas) Fertilizer Co.

Behind the Scenes With Agricultural Chemicals

EDITOR'S NOTE — This paper, "Behind the Scenes With Agricultural Chemicals," was delivered at the national convention of the National County Agents Assn., Salt Lake City, Utah, recently. Author is Dr. Roy Hansberry, manager of the Modesto Laboratory, Agricultural Research Division, Shell Development Co.

Straight furrows were once the mark of the successful farmer. Today's furrows are often sinuous and swerving, shunning the stumps, sands, gravels, stones and sour soils of man-made price controls, income taxes, lethal insecticides, Mexican wetbacks, drift of plant-applied weedkillers, truckers' strikes, acreage limitation and rail freight rates. Helicopters scare our turkeys to death. We vote ourselves into destroying part of our each crop before it ripens. Our own irrigation district runs out of water before our crop is made. We buy a Cadillac one year and sell it for seed the next. We change from cotton to castor beans to flax to potatoes always one year behind the good prices.

But not all our problems are man-made. God and the devil still burden us with briars, bunt, billbugs and boll weevil; blights, bindweed, bark borers, budworms and sandburs; pasts, budmite, blotch, black and brown rats and rots; big bed bugs; brown tail moths and blue tail flies; blacken, bacteria, bullrush and black blister beetles.

While the association of county agents is working and thinking about solutions to the farmers' problems, I want to discuss some of the things the agricultural chemical industry is doing toward the solution of just one kind of farmer problem, namely pest control.

Most of today's pest control problems have a chemical solution. Sometimes this solution is rather dilute, that is it takes a lot of chemical to dissolve a little problem. Sometimes it is more of a suspension than a solution, but as more and more chemicals emerge from behind the research scene, extension and advisory services of government and industry are increasing the solubility of pest control problems.

Let's look at some examples of the kind of work being done by agricultural chemicals today. This room is less than a quarter of an acre in size. It would hold maybe ten mature apple trees and produce as many as two hundred bushels of apples worth $400.00. To control codling moth ten years ago would have required eight sprays totaling two thousand gallons and containing fifty pounds of lead arsenate. That much arsenic applied every year to a piece of ground this size would soon poison the soil more or less permanently. Today codling moth is no longer a major pest in the apple industry. We can get better control of codling moth with a pint of parathion than we ever got with the fifty pounds of lead arsenate. There will be no poisonous residue on the fruit after a few days and none on the ground.

A cotton patch this size might produce a bale of cotton (in California) worth $150.00. Nematodes could cut that in half, but two gallons of D-D costing $3.50 put below the seed row at planting time would be worth $75.00.

A field of alfalfa this size could produce three or four tons of hay worth $75.00. Only 1,500 grasshoppers could eat $25 worth of that alfalfa but it takes only this much (½ ounce) of aldrin to stop that loss.

A Montana wheat ranch this size could produce only three bushels of wheat but Montana is a big state and there are 12,000,000 extra bushels of wheat produced there every year because most growers spray for weed control with 2, 4-D.

Tobacco is a valuable crop. A batch of good tobacco the size of this room would produce $400.00 worth of cured leaf. Budworm and hornworm could eat $100 worth of tobacco with no fear of lung cancer. Here is one of the most valuable chemicals known to science today. It is expensive to make and we can't sell it as cheaply as we'd like but this ounce of endrin could be worth that $100 to a tobacco grower.

These developments didn't just happen. What lies behind the agricultural chemical scene? Where do we in industry and you in advisory work fit in? How long does it take to develop a new chemical and how do you go about it? How much does it cost? Let's look at the biography of a typical organic insecticide. The history may be a little shorter and a little cheaper for a weed killer or a fungicide, but not really different.

It is in an organic synthesis delivery room that our new insecticide baby is born. The parents were fundamental chemistry and insect physiology. Stop a moment and consider the organic synthesis laboratory. It is staffed by a dozen Ph.D.'s with eight to ten years training in the strictest disciplines of chemistry at the most famous (and expensive) universities. These boys are hard to find and none but the best are good enough for this sort of work. Behind and in front of them are the modern (and expensive) tools of modern chemistry.

This sort of synthesis isn't done with fruit jars and kitchen spoons. Simple glassware items at $50 to only moderately complex distillation columns and reaction vessels at $5,000 are just a beginning. The most important tool the chemist has is his library. Ten years of bound American Chemical Society publications cost $2,000 and a set of Beilstein around $700.00. Let your imagination carry you on from there.

Soon after birth, the new baby passes along to the insecticide testing laboratory. This laboratory too, is something special. In it a thousand plants and a million insects and mites are produced each week under constant temperature, light, humidity, soil, and food conditions. A small but highly trained group of entomological technicans counts the flies, mites, aphids, cockroaches, plant bugs, beetles and caterpillars into replicated lots of ten, fifty or one hundred insects. Each species in its own specially designed cage is sprayed, dusted, or otherwise exposed to the

(Continued on page 19)

Weather Damages Crops, Slows Work In Mid-South

MEMPHIS — Extreme cold, rainy weather over the Mid-South has caused some damage to grazing crops and early vegetables, but killed many destructive insects which might have lived through a mild winter.

Extension officials in Arkansas, Mississippi and Tennessee reported that while some damage was done by the cold and rain, it killed insects and helped to fill stock ponds, which had been low for as much as three years.

In Mississippi, specialists for the Agricultural Extension Service reported the cold weather brought growth of winter pastures and cover crops to a halt and in the truck crop areas damage was spotty, with turnips and mustard receiving the most damage. Fruit trees were not hurt.

Arkansas' coldest weather of the winter brought to a halt most farming activities.

C. A. Vines, associate director of the Extension Service, called attention to the fact that the state's emergency hay program ended at midnight Feb. 15. County FHA committees accepted no applications after that date.

In West Tennessee, Judd Brooks, district agent at Jackson, reported little field activity. He said farmers are making plans for the spring and now are figuring purchases of seed and fertilizer.

Herbicide Damage to Crops Reported Low

WINNIPEG — Manitoba's grain crop acreages which have been treated by chemical weed control since 1947 has suffered very little damage from the growth regulating herbicides according to H. E. Wood, director of weeds and publications of the Manitoba Department of Agriculture.

There has been scattered damage to sensitive crops such as sunflowers, tomatoes, ornamentals and windbreaks. Such damage, he said, can usually be traced to three sources, drift, unclean spray equipment and volatization, Mr. Wood said.

J. Warren Kever

JOINS TEXAS FIRM — The Hayes-Sammons Co., Mission, Texas, has announced the appointment of J. Warren Kever to its staff. Mr. Kever is a graduate of Texas A&M College with a B.S. degree and holds a master's degree from the University of Missouri. He has worked two years with the California Agricultural Experiment Station and has spent the last three years with a fertilizer company in California that is engaged in the manufacturing and distribution of fertilizer solutions similar to those now being manufactured by the Hayes-Sammons Co.

Special Retail Section

Better Selling

Richer Fields for Dealers

A SPECIAL CROPLIFE DEPARTMENT TO HELP RETAILERS IMPROVE MERCHANDISING KNOW-HOW

PLANNED CREDIT MANAGEMENT

The Foundation for a Successful Farm Supply Business

EDITOR'S NOTE: Money and credit are most important in the farm supply business, as they are in every industry and nation. A well-rounded presentation on credit control was given by James H. Burrell, president, James H. Burrell & Sons, Inc., St. Louis consulting firm, at the Illinois Poultry Improvement Assn. and Illinois Feed Assn. meetings at Springfield, Ill. Contents of his talk appear here.

The financial requirement of any business depends upon its volume of operation, method of doing business, sales program, cost of operation, efficient management, and use of capital involved in credit, inventory, promotion, advertising, etc.

Money and credit are most important in every business, regardless of size; most fortunes are made with borrowed money. Companies sell stocks and bonds; farmers secure mortgages on their property. Both are raising money with which to purchase land, buildings, equipment, or perhaps to provide or protect their operating funds. Both hope to use the money borrowed to increase their profits.

Borrowed money used wisely becomes a stepping stone to success. But credit out of control will destroy any person or business organization.

The bases for considering credit are:

1. **Character.**
2. **Capacity (or volume).**
3. **Capital.**
4. **Conditions (pertaining to the particular industry in which the company is engaged and also with general business).**

The nature of credit has always been:

1. **Barter.**
2. **Money.**
3. **Credit.**

To give you a full understanding of the term "credit," we will refer to the definition of credit.

Credit: "A right or privilege by means of which one party may use or have at his disposal the use of money, goods or services of another for a limited time and for an expressed or implied consideration."

If you lend a party money, it becomes "lost" for any purpose of your own. Yet nothing so cements and holds together all the parts of society as faith and credit.

Credit plays an important role in business, stimulating the use of products of agriculture and industry through the various steps of production, distribution and consumption. Back of the movement of goods is the energy of credit which gives its impulse to each step toward ultimate use and enjoyment.

Credit derives from confidence based upon historical facts, operating and financial information on millions of manufacturers, wholesalers and retailers who comprise our national system of distribution.

Current information on all phases of business flows into the offices of credit organizations daily; such as, Dun & Bradstreet, retail credit associations, banks; and trained credit men are studying reports and furnishing information on individuals, partnerships and corporations throughout the U.S. and Canada to protect the

(Continued on page 13)

A 10-Point Formula for Success

From a talk by James M. Burrell, James H. Burrell & Sons, St. Louis. See accompanying story.

1. Worry about costs even when there is no apparent need for it. Don't think any cost too small to be worth saving.
2. Pare your overhead to that of a low profit operation on the theory that today's profits are abnormally high.
3. Analyze your business on the basis of profits, not sales.
4. Let your employees have a fair share of the profits in salaries and bonus.
5. Keep your cash position strong and let it work for you instead of allowing your business to work for someone else.
6. Use low pressure selling methods.
7. Handle a line of products in which you have faith.
8. Develop a service business that satisfies your customers.
9. Use satisfied customers as your best advertising medium.
10. Pay more attention to management of your business. Hire employees who are capable of handling the details when policies and programs are established.

SHOP TALK

OVER THE COUNTER

FOR THE DEALER

By EMMET J. HOFFMAN
Merchandising Editor

Several advertisements in an 8-page, special edition titled the "Lone Star News" published recently by the Texas Farm Products Co., Nacogdoches, Texas, have ideas of value to fertilizer dealers. Attention-getting slogans, coupled with factual information feature these ads which appear in the firm's 25th anniversary edition.

"The cheapest way to feed a cow is to fertilize the grass," one slogan states. The same ad contains two other good slogans:

"Grasses and legumes should be fertilized like any other crop. For 200 years we've been fighting grass in east Texas—with proper fertilization we now find grass our most profitable crop."

Another ad leads off in this manner:

"Fertilizer always pays.

"Proper fertilization is the cornerstone of a sound farm program today.

"The suggestion is sometimes made that the way to cure the surplus problem is to quit using fertilizer . . . **it is absurd to suggest that farm problems should be solved by cutting efficiency.**

"A more realistic approach would be to encourage more efficient production so that a farmer can make more money per bale, bushel or ton. If he receives a higher profit for each unit he produces, obviously he can maintain or even increase his income with the production of less units.

"In achieving lower unit costs and higher efficiency, fertilizer is an indispensable tool.

"Fertilizer is more important today than it was in the lush period three to six years ago."

Facts Convince

This same ad contains this valuable chart:

Cotton Costs and Profits For a Typical Operation

	Low fertilization	Recommended fertilization
Fixed cost per acre	$45.22	$ 45.22
Fertilizer cost per acre..	$14.75	$ 27.25
Picking cost per acre ...	$28.00	$ 47.90
Ginning cost per acre ...	$ 5.49	$ 9.40
Interest per acre	$ 1.70	$ 2.79
Total cost per acre	$95.16	$132.54
Yield in lint per acre ...	292 lb.	500 lb.
Value of lint per acre ...	$96.07	$164.50
Net cost (costs less value of seed)	$80.56	$107.56
Profit per acre	$15.51	$56.94
Cost per lb. of lint cotton	$ .28	$ .22

Lint @ $.329 lb. Seed @ $50.00 ton.

Prepared by Clemson College, National Fertilizer Assn. cooperating.

There's another chart which is of

(Continued on page 13)

Farmer-Teacher Wins West Virginia Hybrid Corn Yield Contest

MORGANTOWN, W. VA.—First prize of $50 and a gold loving cup has been awarded to Clyde Phillips, Belington, Barbour County, for producing the most corn per acre in the 1954 West Virginia Hybrid Corn Yield Contest. The award was made here during the annual Crop Improvement Conference held at West Virginia University. Mr. Phillips produced 134.04 bu. shelled corn per acre.

Second prize of $25 went to Edwin Hyre, French Creek, Upshur County, who produced 131.75 bu. per acre. Third prize of $15 was awarded to H. K. Skidmore and Son, Centralia, Braxton County, who produced 126.23 bu.

The loving cup was presented to Mr. Phillips by Joe T. Roddy, sales representative of the donor, the Nitrogen Division, Allied Chemical and Dye Corp. The other awards were presented by Frederic Metze, Hedgesville, Berkeley County, president of the West Virginia Associated Crop Growers, which organization furnished these awards.

To win first prize, Mr. Phillips—who, in addition to farming, teaches school and serves as president of the Barbour County Farm Bureau—on May 11, 1954, planted flat "certified" W. Va. B-25 hybrid corn.

He plowed down an alfalfa sod which was planted at the last working of corn in 1951. After the land was plowed, he applied two tons of burnt lime per acre with a fan-type attachment to a manure spreader. The amount of lime to apply was determined by a lime requirement test. The land was all disked twice and part of it, which Mr. Phillips thought needed it, was disked a third time.

The seed was planted in rows 40 in. apart and was spaced 8 in. apart in the row. Mr. Phillips applied 150 lb. 10-10-10 fertilizer per acre in the row at planting time. When the corn was 8 in. high, 450 lb. 10-10-10 fertilizer per acre was applied by hand between the rows. This, Mr. Phillips says, "was applied partly to supply nitrogen to the corn and partly to supply phosphorus and potassium to the alfalfa and timothy which were seeded in the corn at the last cultivation."

Co-sponsors of the competition, in addition to those already mentioned, included the Agricultural Extension Service, West Virginia University, cooperating with the U.S. Department of Agriculture and the West Virginia Division of the American Bankers Assn.

GROWER PROBLEMS

WORCESTER, MASS.—New England vegetable growers must wake up to the fact that two major problems are facing their future—change in the shopping habits of housewives and increased competition from produce growers in the West and South, John Carew, professor of vegetable crops, Cornell University, said during a round table discussion during the meeting of the Massachusetts Federation of Vegetable Growers' Assn. held here recently.

Better Selling

Richer Sales Fields for Dealers

Doing Business With Oscar & Pat

Tall, bushy-haired and blue-eyed Pat McGillicuddy, partner in the fertilizer firm of Schoenfeld & McGillicuddy, sat in the smoking compartment of the 4:15 train, smoking a cigar and watching the winter sky darken as the train sped far from Des Moines.

Pat was in a happy and excited mood. He had just attended a three day fertilizer convention in the Iowa city, and his mind literally swam with new product knowledge, new merchandising ideas—all of which he felt would help him promote and sell much more fertilizer and farm chemicals, that is, if his conservative partner, Oscar Schoenfeld, would only let him have some elbow room.

But no matter how ornery Oscar proved—and he could be very ornery when trying to cut expenses—Pat resolved not to let Oscar get his "goat." He would just be patient, but persistent, and bring Oscar around to his way of thinking, which would be—Pat was too enthusiastic to admit—like trying to move the Rock of Gibraltar.

Pat was whistling a gay Irish tune when he got off the train at his home town at 5:15. He strode up the street, intending to drop in at the store before closing time.

"Hi, Ben," he shouted, seeing stocky Ben Higgins, the local newspaper publisher, about to duck into a coffee shop without speaking.

Ben Higgins' face was full of anger. "So I give you lots of stories and news items on fertilizer and farm chemicals just because you're a good advertiser. Then when you get the publicity, you cancel your contract. A fine friend you are!"

"Cancel!"

"Yeah, cancel!" snapped Ben, entering the restaurant, then flinging back, "Ask Oscar!"

Puzzled and filled with foreboding, Pat continued down the street. Passing a Grab It Here grocery, he encountered a big farmer, his arms full of groceries.

"So here's the stinker that goes back on his word!" Ez Andrae barked. "Told me you'd give me another sixty days to clean up my account, and then yesterday I get a summons you're suing me."

"Suing you!" echoed Pat. "There must be some mistake! There—"

"There's no mistake," barked the farmer. "Ask—ask that darn Oscar. And I'll never buy another thing at your store—not even ant killer."

The man got into his car and started the engine so loudly the hood and fenders shook. Sadly, Pat went down the street. Did Oscar do this? And why? He realized now that he should never have gone to that convention. Three days was too long a time to be away from the business, and to leave tight-fisted Oscar in sole charge.

A man came along the sidewalk, stopped short as he recognized Pat McGillicuddy. "Pat," yelled Bart Raynor, a good fertilizer customer. "What the heck's the matter with you guys? Didn't you offer me $80 on a trade-in on a new sprayer if I bought before Feb. 1?"

"That I did," Pat said patiently.

"Well, I had my wife telephone in and accept that offer today. Oscar answered her and insulted her when she said you would allow $80. He said you were crazy—that $20 was plenty for that old sprayer. And when she insisted he stick to your offer he just about swore at her. I wanted to go in and break his neck, but my wife wouldn't let me. Said he wasn't worth going to prison for."

"Now take it easy, Bart," said Pat soothingly. "I can straighten it all out. Oscar's really got a good heart, but he can't help bein cautious. I'll see that that sprayer is delivered to you tomorrow, with the $80 allowance on the old one."

Bart snorted. "Let me tell you some thing Irisher. You ain't such a bad fe fow, and you know how to tell stories but I wouldn't buy another nickel worth of anything from your store u til that Dutchman comes out to m farm and apologizes to my wife f talking to her like that. Yes, and b Heavens, I want him to bring alon a five pound box of candy for he too."

"Begorra!" said Pat. "Oscar mus have talked plenty. Leave it up t me, Bart. I'll do what I can wi Oscar."

"Remember what I said, fella," Ba growled, somewhat appeased. "A apology and a five pound box

candy, or I get my fertilizer elsewhere, even if I have to pay more."

Pat's step was a little heavy as he approached his store, but the heaviness was forgotten as he noticed that the fertilizer establishment was dark, although it was a half hour before closing time. The neon sign was not on, neither were the window spots, but he did see a couple of dim lights inside.

"I wonder what happened," he thought.

As he entered the store, he saw that both Tillie Mason and Oscar sat at their desks, with but one small desk light on at each desk.

"Begorra! This place looks like a morgue," Pat said, as he reached over and flicked on two switches, which turned on the outside neon light and the inside store fluorescents.

Oscar frowned. "So you're back, eh?" he said, with a tone of disappointment. "Well, we saved some money on the light bill while you were away. No customers around late in the afternoon anyway. They're all home milkin' or doin' other chores."

Tillie Mason, the plumpish bookkeeper, felt a storm brewing between the partners, so she reached nervously for an ulcer powder. Ann Hydrous, the Maltese cat, also sensed trouble and sneaked under a counter.

Pat came into the office enclosure and sat down at his desk facing Oscar. He still wore his big overcoat and grey felt hat. "Yes, you saved so much money, Oscar, by cancelling our ad contract, by suing Ez Andrae and insulting Bart Raynor's wife on the sprayer allowance deal, that you almost wrecked our business."

"We'll save money by using less ad space and paying the regular rate when we advertise," Oscar said. "And it was time that Ez Andrae paid his bill. He stalled too long. Got to teach some of these fellows a lesson. And Mrs. Raynor, what a screeching voice she has. She insulted me, too, she did."

Pat whistled some of the irritation through his teeth before speaking. "Oscar," he said, "it's right to save money when we can, but it is never right to insult a customer, to try to teach him a lesson. The customer is our bread and butter. You've got to make him be like a king when he comes to buy. I don't know how we can win Ben Higgin's friendship again, or Ez Andrae's trade, but I do know that we can square things with Bart Raynor if you'll go out and apologize to his wife and buy her a five pound box of candy."

Oscar's face went white. "Never! Are you crazy, Pat?"

Pat laid down his hat and his blue eyes fixed on his partner. "Yes, I'm so crazy, Oscar, that unless you apologize to Mrs. Raynor and buy her that candy, you and I are through as partners!"

Oscar's jaw dropped as his face flushed. He said nothing.

Pat waited. "Well, Oscar, what is it?"

Oscar got up stiffly from his chair and put on his coat and hat. "I'll let you know in the morning," he said. "When he slammed the door even Ann Hydrous came out from under a counter to take a cautious look.

"Well, Tillie," Pat said wearily. "What will he say tomorrow?"

Tillie smiled confidently. The storm was over. Her ulcer tension was gone temporarily. "Oh, I know him. He'll apologize and buy the candy even though he'll hate to do it. He knows he can't get along without you in this business. And you can't get along with him, Mr. McGillicuddy."

Pat grinned a little sheepishly. "Maybe you're right, Tillie. Oscar and I both eat regularly, don't we, and pay taxes? So we must be good for each other in that way. But these fights, begorra, make me feel like a dishrag!"

Effectiveness of Liming Studied In Connecticut

A summary of results obtained in a 25-year study on the effectiveness of liming various soils in Connecticut, was made recently by the Connecticut Agricultural Experiment Station at Storrs. The agronomists reporting on the penetrative effects of surface-applied limestone say that on long untilled, fine sand loam, acid soil of a permanent pasture, two factors largely determine the rate and depth of decreasing acidity from surface-applied limestone.

These factors are (1) the quantity of limestone added and (2) the time elapsed since application. For example, five years after liming at 1 ton an acre, only 20% of the acidity of the third inch of soil had been counteracted. The corresponding figure for the 2-ton rate was 60% and for the 4-ton rate, 80%.

To illustrate the importance of the time factor, the greatest depth with decreased acidity from the 2-ton application of limestone was 2 inches after 2 years, 5 inches after 5 years, and 8 inches after 8 years.

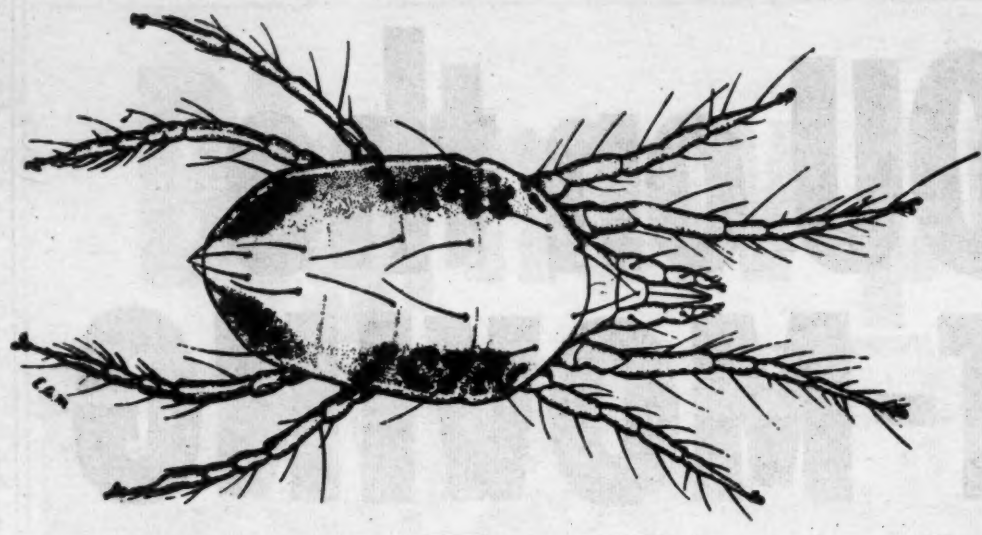
It is concluded that if one adds only a little lime, the acidity of the soil will not be affected very much anywhere and scarcely at all a very few inches below where it is placed. On the other hand, liberal liming on the surface, either all at one time or the same total amount over a period of years, will counteract most of the acidity in the upper inches of soil and also markedly decrease the acidity for several inches and even more than 2 feet below the surface.

If lime is applied on the surface only once, its downward movement will finally leave the upper layers of soil more acid than those further down. In the Storrs experiments, this was found to have occurred 8 years after the application of limestone at 4 tons an acre, and after 18 years when such unusually large rates as 8 and 16 tons had been applied.

Mr. Dealer--Cut out this page for your bulletin board

BUG OF THE WEEK

SPIDER MITE



HOW TO IDENTIFY

The adult female spider mite is an eight-legged, pale-yellow or greenish mite, measuring only about 1/60th inch in length. The male is even smaller, being only about 1/80th of an inch long. Two dark spots, composed of the food contents, show through the transparent body wall. The body is oval in outline and sparsely covered with spines.

HABITS OF SPIDER MITE

After mating, female mites begin laying eggs at the rate of from 2 to 6 a day, each depositing a total of 70 or more eggs during her lifetime. Spider eggs are spherical, shiny and extremely minute, attached to the underside of the leaves, usually to the web which the mite spins wherever it goes over the plant. The eggs hatch in from 4 to 5 days into small, crawling young with only three pairs of legs. Female mites molt three times in the course of their growth, the males twice. A complete generation is produced every 20 to 40 days, but these overlap so that all stages of the mites may usually be found at any given time.

DAMAGE DONE BY SPIDER MITE

The mite pierces the leaf of the plant with two sharp slender lances attached to its mouth, and sucks the sap. Not only does the loss of sap damage the plant, but some entomologists believe that the plant is poisoned by the feeding insect. Many vegetable crops are damaged, but most serious injury is sustained by beans, corn, tomato, eggplant, celery and onion crops. Distribution of this pest is world-wide.

CONTROL OF SPIDER MITE

Application of control materials, whether by spraying or dusting, must be thorough in order to cover the underside of leaves. A common method of control is dusting of finely divided sulfur at 20-40 lb. an acre, or by spraying with wettable sulfur. Parathion and tetraethyl pyrophosphate are likewise effective. Some of the more effective treatments have been described as follows: Dusting with 0.5 to 1% parathion; or freshly-prepared 0.5% actual TEPP; or spraying with 15% wettable parathion at ¼ to ½ lb. to 100 gal. water; or with freshly-diluted TEPP at ¼ to ½ pt. of 20% concentrate to 100 gal. water. For control of mites in indoor areas, such as greenhouses, various aerosol applications of these materials has proved effective. In the latter cases, however, special safety measures must be observed.

Drawing of spider mite (greatly enlarged) furnished Croplife through Courtesy of U.S. Department of Agriculture, Washington, D.C.

Previous "Bug of the Week" features are being reprinted in attractive 24-page booklet, priced at 25¢ single copies; reduced rates in quantities. Write Croplife Reprint Dept., Box 67, Minneapolis 1, Minn.

CREDIT MANAGEMENT

(Continued from page 9)

capital used as credit, to make it safe and profitable.

Principles Underlying Credit

Step by step there has grown up in the U.S. well defined principles of credit which we speak of today as credit management. The successful application and administration of these principles call for intelligence of high order, business management, law and human relations.

Modern methods, research and statistical information have made present day credit management almost a science.

Credit and collections have become an important part of business, both wholesale and retail. There are good reasons why this is so and why it is likely to become more important each year.

Advantages of Credit

Credit plays a vital part in the modern business world. Approximately 90% of the total payments for goods in the U.S. are made by checks. The amount of business transacted with silver, coins and paper money appears very small.

Several advantages of this credit system may be noted:

1. Wide use of checks greatly reduces the actual shipment of money from place to place. Checks also act as receipts.

2. The mechanics of credit permit offsets to be made and thereby reduce the amount of money required in circulation.

3. Credit enables the excess funds of excess producers of money today to be used today, and later repaid by excess money producers of tomorrow.

4. Merchants accumulate goods which are sold on credit for present use and for which settlement will be made later.

5. Banks accumulate the excess funds of many customers—the owners of money—and lend large and small amounts to active borrowers who will use these borrowed funds in their business today and repay from their excess money when due.

6. Through this service in the movement of goods from manufacturer to dealer and dealer to consumer, credit has helped make possible modern, large-scale production, distribution and wide-spread division of labor.

7. Present day processes of distribution, both wholesale and retail, are largely depended on the mechanism of the various forms of credit.

Credit Management a Must

Let us analyze briefly why credit management is a MUST in business of all kinds.

1. Trade conditions do not remain the same. Whether they move up or down there is a point where they will turn abruptly. Therefore, the price of success depends upon gathering information and making proper credit decisions.

2. We are living in an age of decreasing margins of profits which do not allow for long-time credit. To earn a satisfactory profit on invested capital, the dealer must turn his stock rapidly—and keep turning it. Dealers must be taught to take advantage of all cash discounts, to sell for cash and use extreme care in making credit sales. The dealer must collect his money promptly so he can buy and sell more merchandise.

3. Costs of doing business must be given far more study and be controlled more efficiently in the future. Compensation of officers and personnel must be carefully administered; their earnings depend upon the earnings of the business. Profits will be reduced in direct ratio to credit losses and inactive capital, because there will then be a smaller amount of gross business out of which to pay overhead costs of doing business.

Different people have different ideas as to what is a good credit risk. Bankers place great stress on financial standing. They want accurate financial statements. They want to know how you pay your bills.

Manufacturers want financial statements, also, but because of the close relationship with the dealer, they take a little greater degree of chance on the dealer's character, capability, reputation, etc., in the past. They know that a good dealer of good character will usually make up in hard work, ideas, cooperation, loyalty and efficient merchandising what he may lack in work capital.

For a dealer to earn and merit a good credit reputation enjoyed by so many business men today requires years of honest dealings, attention to business, satisfactory handling of his accounts according to terms, and other similar factors.

To destroy that reputation may require but one day. One unwise financial move, carelessness, or false report can completely tear it down.

Mere opinions count for very little in determining a credit policy or the limit of credits to a customer. Facts are what count. That's what the manufacturer wants — that's what the dealer wants.

The man who approves credit for the manufacturer, or the dealer, is just as much interested in approving an order as the salesman who writes the order. He does not get paid for orders turned down but for profitable business which he helps in building up. Credit policies must go hand in hand with sales policies. Credit managers want to help the salesmen sell; however, sometimes salesmen will not cooperate; they fail to give factual information.

Under present day methods of sales and deliveries, the salesman generally sees the farmer more often than the dealer. The same is true with territory salesmen or managers for the manufacturer.

The salesman sees the customer in the store or on the farm and can render valuable service by reporting on conditions that he finds in either case. He can advise on how purchases on the farm are made on other items other than what is handled by the dealer.

For some unknown reason, dealers hesitate to get financial reports on farmers in too many cases. A dealer should check with his local bank, credit agency and other references to see whether the new customer buys for cash or asks for credit.

A complete credit file should be kept up to date in all dealer stores. Some day, a cash customer may ask for credit—and the dealer should be on his toes and say to Mr. Jones, "Just a moment, let me look at our file." Or he should know who to ask whether or not Mr. Jones was eligible for credit. Many hundreds of thousands of dollars are lost each year by retail dealers because credit has been extended to people who cannot pay for what they have purchased.

Always remember that credit is your money or merchandise being used by someone else. It is your money—protect it and use it wisely.

Work Closely with Banks

Many manufacturers and dealers are reluctant or hesitate to use banks as a source for money needed in their respective operations. Dealers should work closely with their local banks. Every dealer should solicit his banker's cooperation in working up an approved list of farmers to whom the bank will extend credit when needed. Manufacturers should cooperate with all dealers and assist them in the presentation and request for credit from the bank instead of exhausting their own working capital in the extension of credit.

Too often, we hear reports from dealers and manufacturers that, "My banker won't lend money to so and so . . ."—Or, "My banker won't give farmers credit for raising turkeys, hogs, chickens, cattle, etc." Many, many times we have found that the same banker who the dealer or manufacturer thought was unwilling to go along in the extension of credit was perfectly willing to extend credit to reliable people for reliable operations. But no one had given the banker the complete story, substantiated by facts and figures.

Invite your bankers to conventions, meetings, etc., where sound educational, management and farming programs are presented. This will give him the opportunity to learn all about your program.

Terms of Sale

Terms of sale should be fully understood by all employees. These are:

1. Cash sales
2. Quantity discounts
3. Open accounts
4. Open — pay upon receipt of invoice
5. Sight draft
6. Arrival draft
7. Open—cash discount—7 days —10 days
8. 30-day accounts
9. Trade acceptance — 30-60-90 days

Whatever the terms, the accounting and credit departments should fully understand their meaning, so they can cooperate with the sales departments.

There is a definite four-point program for credit management in the feed business:

1. Select your credit customer; don't let him select you.

2. Build an understanding with him. Get a definite understanding about the credit relationship, especially when payment is to be made.

3. Follow up all accounts. The collection follow-up is to make sure the understanding about the payment is carried out.

4. Secure mortages on operations where credit reports indicate their need for protection. Interest on credit and insurance on stock to be included in mortgage.

The following forms are recommended for use in this credit program:

1. Application for credit.
2. Financial statement (this form is combined with application for credit).
3. Promissory note delivery ticket.
4. Insurance form.
5. Mortgage.

We recommend that the following points be considered, regardless of the particular phase of the feed business you are associated with:

1. Sell for cash first.
2. Sell on short credit terms and only when credit is necessary.
3. Set up fixed charges or rate of interest on all slow accounts.
4. Charge a fixed sum or interest on all long term accounts.
5. Develop a strong relationship with banks.
6. Develop a strong, aggressive banker program for farmers in each trade area.
7. Develop a training program for salesmen and dealers on how to manage credit.
8. Develop a training program between all departments on how to handle company money.

OVER THE COUNTER

(Continued from page 9)

interest to an enterprising dealer: It's titled: "Corn growing can be profitable."

	Low Rate Fertilization	Recommended Rate Fertilization
Fertilizer cost..	$ 8.40	$22.50
Fixed cost	$17.13	$17.13
Total cost	$33.32	$58.02
Yield	21.8 bu.	50.0 bu.
Value of crop..	$32.70	$75.00
Profit	—$.62	$16.98
Cost per bushel..	$ 1.53	$ 1.16

Corn @ $1.50 bu. Prepared by the National Fertilizer Asen., data from Clemson College.

Confidence

Acquiring the confidence of customers is a primary goal of the Texas Farm Products Co., founded in 1930 by M. S. Wright, Sr., who still is president of the firm. Although the company manufactures fertilizer, its goal actually is no different from a dealer's goal.

Mr. Wright has found that sound, basic principles of merchandising pay off. The firm's dealers believe in, and carry out on-the-farm selling. Every order is checked and double-checked. Efforts are made never to make an error or an invoice or statement. The salesmen are highly trained and well-qualified to merit the customer's confidence. Demonstrations and displays are emphasized. Careful production records on crops are encouraged. Shipments scheduled for a certain time are delivered as promised.

The special section points out that four guiding principles dictate the company's merchandising program:

1. Sell a quality line of fertilizer and related products.
2. Give over-night delivery service.
3. Have reasonable prices.
4. Instill confidence in products sold.

Weed Control Study To Be Continued In Massachusetts

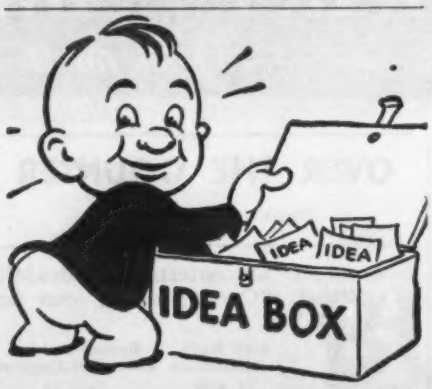
BOSTON—Weed eradication chemicals have been used for the past two years with partial success, the Massachusetts Division of Sanitary Engineering reported in its request to the State Legislature to continue the weed-elemination study for three more years.

The Department of Public Health recommended the study to be continued by its division of Sanitary Engineering stressing that heavy weed growths in ponds and lakes constitute a health nuisance and an economic loss.

The department said that a number of weed-eradication chemicals had been used, but none of the experiments were conclusive. The report said: "There is a definite need for some good method of eliminating or controlling submerged weeds which are making the use of certain ponds dangerous or undesirable."

The division of sanitary engineering undertook the study two years ago after many complaints that underwater weed growth constituted a public nuisance and health hazard. Complaints were chiefly concerned with submerged weeds, which came to the surface, decomposed and produced odors.

In its report to the legislature, the department stated that control of submerged weeds costs hundreds of thousands of dollars each year, especially in areas of irrigation. The report listed ponds in Scituate, Cohasset, Boxford, Cambridge, Danvers, Natick, Newton, Wellesley and Saugus on which experiments with chemical weed control methods were tried during the past two years.



What's New...

In Products, Services, Literature

You will find it simple to obtain additional information about the new products, new services and new literature described in this department. Here's all you have to do: (1) Clip out the entire coupon and return address card in the lower outside corner of this page. (2) Circle the number of the item on which you desire more information. Fill in your name, your company's name and your address. (3) Fold the clip-out over double, with the return address portion on the outside. (4) Fasten the two edges together with a staple, cellophane tape or glue, whichever is handiest. (5) Drop in any mail box. That's all you do. We'll pay the postage. You can, of course, use your own envelope or paste the coupon on the back of a government postcard if you prefer.

No. 5050—Laboratory Carts

The Laboratory Construction Co., manufacturer of laboratory equipment, has published a new booklet "Put Wheels to Work in Your Laboratory." The folder describes special

purpose carts and portable tables. It shows the variety of uses carts serve and how they speed laboratory work, reduce breakage of glassware and instruments, help cut labor costs and add mobile work space. Illustrated is the new tote box cart which is ideal for the carrying of grain and feed samples either in small packages or bulk. It is one of the nine special carts and portable tables illustrated in the booklet. Other types are glassware carts, chemical carts, flask carts and portable instrument carts. Diagrams, descriptions and prices are included. For a free copy please check No. 5050 on the coupon and drop it in the mail.

No. 6208—Pesticide

VAPAM, a new pesticide, has been announced by the Stauffer Chemical Co. Consisting of sodium N-methyl dithiocarbamate, this product is claimed to be stable in the commercial concentrated solution, but decomposes rapidly in damp soil to liberate a penetrating gas which dissipates in a few days. Under most conditions, crops may be planted within seven days after soil treatment. A general purpose soil fumigant, VAPAM is said to control practically all types of soil-borne diseases, nematodes, growing weeds and weed seeds, as well as certain species of soil infesting insects and related pests. Although especially suitable for seed bed treatment, VAPAM also shows promise for a wide range of soil problems a company release states. The product is highly soluble in water and requires no special equipment. VAPAM can be introduced into the soil through irrigation equipment, to the plow sole, or to the ground surface in connection with the use of a rototiller. With suggested methods of application no ground coverings are required. To secure more complete details check No. 6208 on the coupon and mail it to this newspaper.

No. 6204—Plant Antibiotic

Agri-mycin 100, trade name for an antibiotic spray powder, is described in a new bulletin recently released by the Agricultural Sales Division of Chas. Pfizer & Co., Inc. The bulletin's summary states: "Agri-mycin 100, an antibiotic formulation of Streptomycin and Terramycin, is recommended for the control of a number of plant diseases. The possibility of building up resistant strains is greatly reduced by using this combination of antibiotics. The active ingredients of Agri-mycin 100 are readily soluble and are rapidly absorbed by the plant, providing systemic protection. Agri-mycin 100 is a stable, free-flowing, noncorrosive, fine powder intended for use in standard sprayers." To secure this bulletin check No. 6204 on the coupon, clip and mail it to the address provided.

No. 5063—Broadcaster

The Farmer Feeder Co., Inc., has designed its new Farmer electric broadcaster so that it can be mounted on a tractor (front or rear), truck or jeep. It operates off any 6-volt battery. According to the manufacturer, this broadcaster evenly distributes all varieties of seed (including Brome), sowing up to 20 acres per hour and covering areas up to 30 ft. wide. Push-button operation is made possible when the unit is drawbar mounted. Only three bolts and a single wire are used to mount the unit, ready for operation. All motors are sealed against dust and, in addition, are factory lifetime lubricated. To secure more complete details check No. 5063 on the coupon and mail it to this newspaper.

No. 5070—Bulk Transport

Now available is Baughman Manufacturing Company's bulk transport body, called by the trade name, Bulkmobile, which has a capacity of 780 cu. ft. Other models are available in lengths from 15 ft. to 33 ft., with body sides up to 36 in. high. Feeds, fertilizer and many other diverse materials can be transported, states the company. Discharge rates vary from ½ to two tons per minute, depending on the weight of the material. Four discharge attachments are available: 1. Screw conveyor; 2. belt and bucket elevator; 3. belt conveyor, and 4. distributor for spreading purposes. Among the body's features are full hydraulic operation for both body conveyor and discharge accessories, compartmented body for multiple deliveries, externally operated compartment doors and streamlined, all welded body with large heavy-gauge body hatches. To secure more complete details check No. 5070 on the coupon and drop it in the mail.

No. 5091—Heating Tape

The Miller Manufacturing Co. has announced new developments in its product called by the trade name, Little Giant No-Freeze heating tape. Suitable for poultry and livestock fountains, as well as for various uses in industrial plants and factories, the product is claimed to resist oil, grease, mild acids and alkalies; can be operated continuously at temperatures up to 176° and works off an AC or DC light socket. It is claimed to be shockproof, fireproof and waterproof and has a self-contained electrical unit. The retail price quotation begins with a 6-ft. size. For more complete details check No. 5091 on the coupon and mail it to this publication.

No. 6201—Insecticide

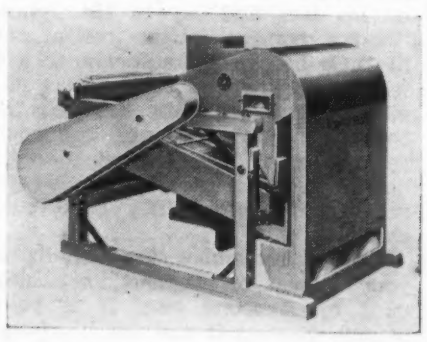
A new insecticide for controlling house flies and other insects has been announced by Carbide & Carbon Chemicals Co., a division of Union Carbide and Carbon Corp. It has been

Also Available

The following items have appeared in the What's New section of recent issues of Croplife. They are reprinted here to help keep retail dealers on rotational circulation informed of new industry products, literature and services.

No. 5067—Grain and Seed Cleaner

Thomas Robinson & Son, Ltd., announces the production of a dual purpose cleaner, type PDm, offering high capacity at low power consumption. As a pre-cleaner the capacity is 15 tons an hour and five tons as a grain and seed cleaner. The manu-



facturer states that the machine is highly adaptable. It can be installed in any building, with one or several floors. Feed can be directly from a bin, through spouting, or by elevator while power can be from an in built motor, line shaft. To secure more details check No. 5067 on the coupon and drop it in the mail.

Send me information on the items marked:

- ☐ No. 3661—Sales Leaflet
- ☐ No. 3662—Ad Reprints
- ☐ No. 5050—Carts
- ☐ No. 5063—Broadcaster
- ☐ No. 5067—Grain Cleaner
- ☐ No. 5070—Transports
- ☐ No. 5083—Pulley
- ☐ No. 5084—Indicator
- ☐ No. 5091—Heating Tape
- ☐ No. 6191—Dispenser
- ☐ No. 6199—Alkylanilines
- ☐ No. 6200—Moisture Measurement
- ☐ No. 6201—Insecticide
- ☐ No. 6202—Spit Duster
- ☐ No. 6204—Plant Antibiotic
- ☐ No. 6208—Pesticide

NAME .....

COMPANY .....

ADDRESS .....

—CLIP OUT—FOLD OVER ON THIS LINE—FASTEN (STAPLE, TAPE, GLUE)—MAIL—

FIRST CLASS
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MINNEAPOLIS, MINN.

BUSINESS REPLY ENVELOPE
No postage stamp necessary if mailed in the United States

POSTAGE WILL BE PAID BY—

Croplife

P. O. Box 67,

Reader Service Dept. Minneapolis 1, Minn.

given the name "cyclethrin" and is chemically related to allethrin. A company announcement states that "Cyclethrin is synergized by readily available synergists to a far greater extent than is allethrin. Therefore, it can be used to advantage in oil space sprays and in low-pressure aerosols for use against house flies, gnats and mosquitoes. Cyclethrin is more effective when used in dairy and livestock sprays. Field tests have shown that treadle spray concentrates containing cyclethrin afford dairy and beef animals excellent protection from horse flies. In addition, sulfoxide and piperonyl butoxide synergizes cyclethrin better than allethrin for knockdown of German roaches. Cyclethrin has the same low order of toxicity to warm-blooded animals as allethrin or pyrethrins."

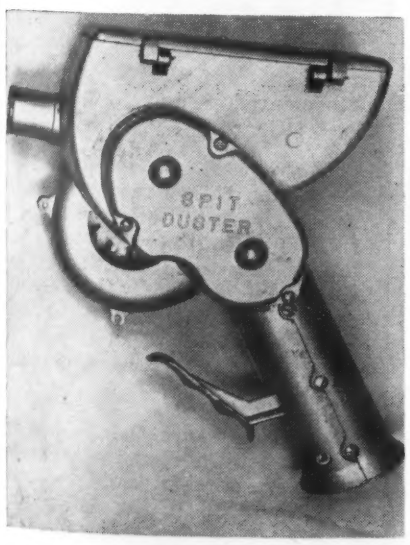
The product is available at the present in limited quantities for test purposes. To secure more complete details check No. 6201 on the coupon and drop it in the mail.

No. 6200—Moisture Measurement

New literature on the product called Irrigage, a soil moisture measurement system, has been produced by the Rayturn Corp. According to one of the folders issued by the company, this instrument can be "quickly installed and used on any irrigated farm, large or small, without special training." The folder cites the dangers of under-irrigation and over-irrigation. The system involves the use of Irrigage Gage-Stakes which consist of four active cells, placed at 6-, 12-, 18- and 24-in. levels. The cells are made of gypsum which becomes wet or dry as the surrounding soil. The folder suggests that these stakes be placed in each separate crop and in each separate soil type. The Irrigage meter connects to the stake and a selector switch permits readings to be taken at all four levels in less than 30 seconds. Daily readings are suggested. To secure more details about this system check No. 6200 on the coupon and drop it in the mail.

No. 6202—Hand Spit Duster

A new insecticide spit duster which can be operated with one hand, leaving the other hand free to move foliage or to hold plants, is available through the distributors of Raw Materials Trading Co. The dust projection distance is 12 ft., and the duster



holds 5¼ oz. of material equal to 7 min. of dusting. The weight of the duster, which will find its use among home gardeners, nurserymen, and others, is 5¼ lb. To secure more complete details check No. 6202 on the coupon and drop it in the mail.

No. 6199—Alkylanilines

Two alkylanilines, available in pilot plant quantities, have been added to the group of nitrogen petrochemicals made by Monsanto Chemical Company's Organic Chemicals Division. The new compounds are alkylaniline C-5, with an average of five carbons for the ring-substituted alkyl group, and alkylaniline C-12, a mixture in which the alkyl group averages 12 carbons. Technical data sheets prepared by the company, which may be had on request, suggest that the chemicals be evaluated as intermediates for use in agricultural and other industrial applications. To secure additional information check No. 6199 on the coupon and drop it in the mail.

No. 6191—Rodent Poison Dispenser

The Solvit Chemical Co. has announced new developments in its product called by the trade name, Kelly's "See-In" Rodent Cafeteria. The unit holds one quart of liquid poison, 6 lb. of dry poison or both at one time. An inspection window permits ease in checking bait consumption. The unit is 7½ in. high, 12 in. wide and 12 in. long. It can be attached to the floor. Constructed of galvanized steel, the unit has a bottom, preventing spillage on the floor. For more complete details check No. 6191 on the coupon and mail it to this newspaper.

No. 3662—Ad Reprints

Transichrome Co. has available new literature on its full color transparency process which explains a new special introductory offer and quotes reduced rates for quantity copies. These transparencies are made from actual ad reprints, tear-sheets or any other printed matter with full color fidelity, the company states. Shadow box, socket, cord and plug for point-of-sale display are also available. Certain changes in copy are possible with this method, it is explained. To secure more complete details check No. 3662 on the coupon and drop it in the mail.

No. 3661—Sales Leaflet

A four-page leaflet, listing 25 "ideas to help make more sales," has been developed by Kelly-Read and Co. Copies of the leaflet are offered at no cost. They cover such points as: Planning your working time; the importance of the first minute with the customer; making yourself understood; asking for the order, and keeping promises. To secure the leaflet check No. 3661 on the coupon and drop it in the mail.

No. 5084—Level Indicator

A descriptive folder about a level indicator called Bin-Vue has been prepared by its manufacturer, Convair, and is available without charge. The folder contains construction diagrams, photographs, descriptions and price information about four models. The four are the standard, heavy duty, explosion proof and high temperature models. The indicator is suitable for powdered, granular, lumpy and wet materials and slurries, the folder states. To obtain the folder check No. 5084 on the coupon and drop it in the mail.

No. 5083—Magnetic Pulley

The Homer Manufacturing Co., Inc., manufacturer of the Homer Hercules permanent magnetic pulley, describes this product's applications and features in a new illustrated 8-page bulletin, PY-260. These pulleys automatically remove tramp iron from feeds, chemicals and other materials, and separate ferrous from non-ferrous materials, the bulletin states. The bulletin includes diagrams, performance data, specifications and a guide for selecting proper size. To secure the bulletin check No. 5083 on the coupon and drop it in the mail

FARM SERVICE DATA
Extension Station Reports

Chemical weed control recommendations for 1955 in field crops have been issued by Cornell's Extension Service. Stanford N. Fertig and Marvin M. Schreiber are the authors of the bulletin.

Crops covered include corn, oats, wheat, barley and legumes. Control of weeds in permanent pastures, as well as control of perennials, grasses and woody plants, is also explained.

The bulletin tells how to mix spray materials and how to check sprayers. Hints are given on applying chemicals and some new herbicidal materials are described briefly.

★

If potassium deficiency is the cause of leaf scorch in apple orchards, two spring or fall applications of three or four lb. 60% muriate of potash broadcast under trees will prevent recurrence of symptoms, according to New York Extension specialists.

Symptoms appear first on older leaves and progress toward upper ones. Scorching proceeds inward from leaf margins and leaves may fold, roll, fray or tatter.

Moderate dosages of potassium bearing fertilizers at three- or four-year intervals is said to be a satisfactory control practice.

★

Experiment station results point to the desirability of using a 1:1:1 ratio fertilizer in growing grapes in most New Jersey situations, reports the New Jersey Extension Service. Usual application for producing vine yards is around 800 to 1,000 lb. pe acre. A complete fertilizer is recom mended. Soils which are well draine and contain ample organic matte are said to be ideal for grape growing

★

Peach fertilization program should have two definite objectives says J. V. Ruef, Pennsylvania exten sion horticulturist. These are to stim ulate tree growth and maintain o build up high organic content.

He recommends a complete fertilizer because it meets the demands of both the trees and for soil building.

Non-bearing trees should receiv one to 1½ lb. of fertilizer with a analysis of 10-6-4 or 10-10-10, ac cording to the horticulturist. Soil should also have lime requiremen fulfilled.

★

A series of pest control leaflet is now available at all County Agri cultural Extension Offices in Wes Virginia. The pest control series, pre pared by Dr. C. F. Bishop, extensio plant pathologist and entomologist includes the following titles: Wes Virginia Vegetable Pest Contro Guide; West Virginia Tree-Shrubs Turf Pest Control; West Virgini Home Orchard Spray Schedule; Wes Virginia Field Crop Pest Control, an West Virginia Farm Fly Control.

★

The apple sawfly, first seen in th Hudson Valley in 1947, is now firml established there and in adjoinin apple areas of Connecticut and Ne Jersey. Tests with various insecti cides conducted by Leo Boulange of the department of entomology a the Experiment Station at Geneva and Dr. Ralph Dean of the station' Hudson Valley laboratory, indicat that parathion and dieldrin as use in routine post-bloom sprays for oth er pests of apples will also afford good control of the sawfly. Typica sawfly injury appears in the form o "curlicues" on mature fruit, mark ing the route of larvae as they tun nel their way through the apple Injury has been noted in nine vari eties, but early sorts generally suffe more damage. McIntosh has bee attacked more severely to date tha any other variety.

★

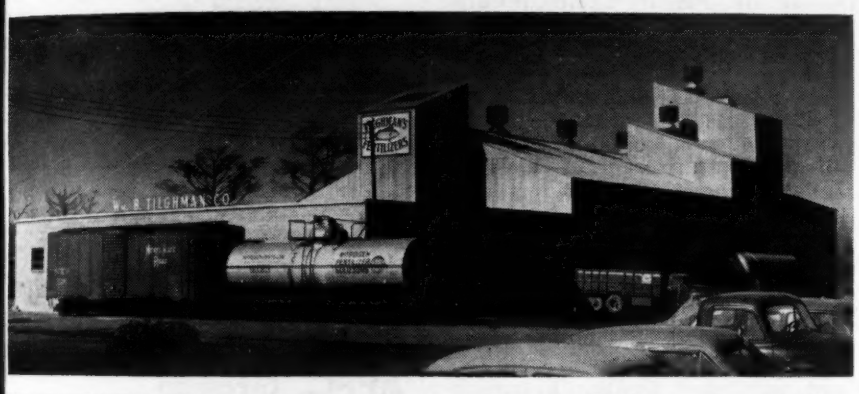
If this turns out to be as mild winter as the past two years, seriou outbreaks of bacterial wilt in cor may be expected, according to Cor nell scientists at the Experiment Sta tion at Geneva.

If the winter is mild, flea beetles which harbor the wilt bacteria survive in large numbers, emerge from the soil in the spring and infect corn seedlings. If it gets cold enough, most of the beetles die out over winter, with the result that infection is curtailed to the point where loss from wilt is negligible.

A "temperature index" has bee developed by adding the mean tem peratures for December, Januar and February. If this index stand at 90 or above for this winter, bac terial wilt will occur in serious pro portions this coming season, say th scientists. If it is 85 or below, wil will be absent or light. Anything be tween 85 and 90 make forecasts un certain.

In March the Cornell Extensio Service will issue forecasts on probable incidence of wilt for differen parts of the state on the basis o the winter temperatures. Early var eties are generally more susceptib to wilt than later and main seaso sorts. Success has been obtained controlling wilt by controlling fl beetles with DDT.

CHEMCO JOINS CHEMICAL ENTERPRISES—Daniel B. Curll, Jr., president, Chemical Enterprises, Inc., New York, Tully W. Talbot, president, Chemco, Audubon, Iowa, and Frank G. Breyer, chairman of the board, Chemical Enterprises, Inc., are shown above, left to right, looking over a map of Chemco's sales territory soon after it was announced that the Iowa firm had joined Chemical Enterprises. (See page 1 of the Feb. 7 issue of Croplife.) Chemco will continue under the leadership of Mr. Talbot. There are now 50 fertilizer distributing firms, with about 300 distribution points, affiliated with Chemical Enterprises.



NEW PLANT—Shown above is the new Wm. B. Tilghman Co. fertilizer plant, in Pocomoke City, Md., which was recently dedicated. (See page 2 of the Feb. 7 issue of Croplife.) The plant replaces one destroyed by fire in November, 1953. It is 95 ft. wide and 210 ft. long, with a gallery for conveyors above. Several hundred persons attended the dedication and were taken on a tour of the new plant.

Fred G. Barnet

E. Monroe Hornsby

NEW FULTON OFFICERS—Two new vice presidents have been named by Fulton Bag & Cotton Mills, and four widely known southerners have been elected to the board of directors during the company's annual stockholders meeting. The vice presidents are Fred G. Barnet, manager of Fulton's Dallas, Texas plant, and E. Monroe Hornsby, manager of Fulton's New York office. The directors are Robert O. Arnold, Covington, Ga.; Herbert R. Elsas, Atlanta; William E. Mitchell, Atlanta, and James D. Robinson, Jr., Atlanta. Mr. Elsas succeeds the late John M. Slaton, ex-governor of Georgia, while Mr. Arnold, Mr. Mitchell and Mr. Robinson assume newly created positions on the board. All other Fulton directors and officers were reelected, according to an announcement by Norman E. Elsas, chairman of the board. Mr. Barnet first became affiliated with Fulton in 1939 at the Atlanta plant. Following service in World War II he returned to the office in Atlanta where he remained until going to Dallas in 1949. He became assistant manager in Dallas during 1952, was elected to Fulton's board of directors the following year, and in 1954 became manager of the Dallas plant. Mr. Hornsby joined Fulton in the Atlanta office and subsequently served in the sales department in St. Louis, Denver and Chicago. After World War II service he rejoined the company's St. Louis office, and then went to New York, becoming Fulton's assistant manager. He became manager of the New York office in 1947 and was elected to the board of directors in 1951.

WORLD REPORT

Industry News from Everywhere

By GEORGE E. SWARBRECK
Croplife Canadian and Overseas Editor

The influence of the scientist on agriculture and the way in which science has affected the trend and the practice of agriculture in respect of food products are subjects for discussion whenever experts meet.

Such an occasion occurred in London recently when Dr. Leslie H. Lampitt, himself a food chemist of distinction, spoke to the Royal Society of Arts, Manufactures and Commerce. His subject was science and food production.

Since DDT was synthesized and became a commercial proposition, a great array of chemical bodies has been made available to the agriculturist, and crops which would have been ravaged by insects and fungi have been saved, Dr. Lampitt declared.

Cited as an example was the tea district of Ceylon which would have been devastated by blight if research men had not found the corrective treatment. Gardens once threatened with extinction now flourish like the proverbial green bay tree.

Science, too, has made it possible to work areas which previously were untenable. In this connection Dr. Lampitt pointed to the initial work of cutting the Panama Canal. During the few years the French were operating there 22,000 workers died from malaria. The American company, when it took over at the beginning of the century sprayed the whole area with paraffin and had the canal completed by 1914.

It is only 50 years ago that such crude methods had to be adopted and now scores of chemicals are available to bring the same result more easily.

Other Examples

Dr. Lampitt quoted other cases of success achieved by agricultural chemicals. At one time the mosquito infested area of Postunia in Italy was only fit for wandering herds of thickcoated, near wild cattle. Benito Mussolini tackled the problem and by draining and spraying with insecticides turned it into a profitable market garden area.

Insecticides are being used in many tropical countries to recover good growing land from the jungle and science can take the credit for making all this possible, in the opinion of Dr. Lampitt.

To which may be added that the agricultural chemical industry aided progress by its ability to make use of all that the scientists discovered.

Scottish Progress

Listed among the developments completed by Scottish Agricultural Industries, Ltd., one of Britain's largest operators in the fertilizer business, are the provision of granulation plants at all main plants, the erection of bulk storage, mechanical handling equipment and high speed packing units at two plants and the construction of a new sulfuric acid plant at Aberdeen.

The fertilizer plant at Leith is to be completely reconstructed with the building of a new factory to handle seaborne materials for the production of phosphatic fertilizers. The present plant will be used as a storage and distribution center.

Indian Fertilizers

A scheme to expand fertilizer production at India's Sindri plant, by manufacturing urea and ammonium nitrate sulfate, or double salt, has been approved by the government of India.

The planned expansion will increase capacity by more than 60%, according to officials. Under the scheme, the entire quantity of 1 million cubic feet of coke oven gas produced daily is to be used for the production of 70 tons urea and 400 tons double salt.

Both fertilizers are considered to be suitable for large areas of cultivated land in India, and since the government's project to achieve self sufficiency in food supply is to be expedited, the fertilizer will fulfill an urgent need, observers state.

The construction of the plant is to be in the hands of a firm of Italian engineers and it will take three years to complete.

Other projects, ancillary to the Sindri operation, are now under consideration with a view to increasing fertilizer output still further. Plants are to be built in other parts of the country also, officials recently revealed.

One of the possibilities already mentioned is a 200,000 ton capacity ammonium sulfate plant in connection with the exploitation of lignite in a 100 sq. mi. area in the South Arcot district of Madras State.

Japan's Progress

Due to the use of better seed varieties, increased use of fertilizers and other scientific agricultural practices, Japanese farmers are almost doubling their annual crop production.

Farms which produced 60 bu. of rice to the acre before World War II are now producing 80 to 120 bu. Potato production has risen from five to eight million bushels a year. In addition, the standard of living of the Japanese farmer has increased by 40%, an instance of fertilizer usage paying dividends.

German Deal

Farbwerke Hoechst A. G., Frankfurt-Main, Germany, has acquired 50% of the ordinary share capital of Hoechst Chemicals, formerly known as Lawfer Chemicals. A new company, Lawfer & Co., has been formed to carry on activities relating to products not previously handled by the Hoechst interests.

Dr. K. Weil and F. J. Bellenger, a member of the British parliament, have joined the board of Hoechst Chemicals.

Canadian Production

The wheat growing areas of western Canada are producing more bushels to the acre than they did a few decades back.

W. G. Malaher of the Searle Grain Co., Ltd., Winnipeg, has been examining old records and he finds that in Manitoba the yield in the period 1939-54 averaged about 5.5 bu. to the acre more than it did in 1921-38. Similarly, average wheat yields in Saskatchewan and Alberta, respectively, were about 3.4 bu. and 2.8 bu. higher in recent years.

It is possible, Mr. Malaher reports, that part of this increase may be due to better moisture conditions. On the other hand, he considers that among other factors the chemical control of weeds, and the more widespread use of fertilizers have played in part in achieving higher returns in recent years.

Texas Society Names Officers, Directors; Announces 1955 Plans

HOUSTON — B. L. Henderson of the Campbell Fertilizer Co., Inc., here was recently named president of the Texas Plant Food Educational Society for 1955. Mr. Henderson was also named a director.

Dr. N. D. Morgan, American Potash Institute, Shreveport, La., was chosen vice president, while Sherman W. Clark of Texas Gulf Sulphur Co., Houston, was elected secretary-treasurer.

Those appointed directors were Dean Smith, Hi-Yield Fertilizer Co., Bonham; Harold Trammell, Farmers Fertilizer Co., Texarkana; J. T. Carlisle, Jacksonville Fertilizer Co., Jacksonville; T. Wright, Texas Farm Products Co., Nacogdoches; James Dawson, Jr., Fidelity Chemical Corp., Houston; Floyd Prather, Central Texas Fertilizer Co., Comanche; and A. L. Bennett, Amarillo.

A three-point program for 1955 was announced by the officers and directors. The program includes enlisting membership of fertilizer dealers for the purpose of forming a training program to assist dealers in making definite and positive fertilizer recommendations for various soils and crops; recommendations being those developed by the Texas Agricultural Experiment Station and publfished by the Extension Service.

Directors of each district were made responsible for developing the educational meetings, and each district is to hold at least one general assembly.

A simple, inexpensive fertilizer recommendation poster is being planned for distribution among affiliated fertilizer dealers.

Western Cotton Conference Plans Set

PHOENIX—Cotton growers in the far western section of the Cotton Belt will gather here from five states in March to examine up-to-date information on producing cotton in this area. The fourth annual Western Cotton Production Conference will be held March 8-9 at Hotel Westward Ho, according to Mitchell Landers, president of the Southwest Five-States Cotton Growers Assn. and conference chairman.

Proper water use for increased cotton yields will be discussed, Mr. Landers said, as well as fertilization, effects of spacing plants on cotton production, cotton diseases, insect and weed control, and defoliation. The Western cotton men will hear experts discuss hand harvesting versus machine harvesting, in relation to cost and profit; and how quality of raw cotton affects market value and spinning mill operations.

They will hear successful colleagues outline techniques used in producing three bales per acre of upland cotton, and two bales per acre of long staple cotton.

ASC Appointment

WASHINGTON — Ezra Taft Benson, secretary of agriculture, has announced the appointment of Orestes A. Knight of Portageville as a member of the Missouri Agricultural Stabilization and Conservation Committee, replacing Harry B. Campbell of Lilbourn.

H. J. Dowsett

Croplife Representative In Toronto Appointed

MINNEAPOLIS—Harvey E. Yantis, president of The Miller Publishing Company, has announced the appointment of Harry J. Dowsett as Croplife special correspondent in Toronto.

Mr. Yantis said: "This appointment will insure continuance of the careful coverage of the Canadian market following the transfer of George E. Swarbreck to Minneapolis."

Mr. Swarbreck will serve on the editorial staffs of Croplife and other publications of The Miller Publishing Co. in Minneapolis. He was manager of the company's Toronto office before his recent transfer.

APFC, Grange Sponsor Essay Contest

WASHINGTON—"Gaining Ground With Fertility" is the title of the new streamlined conservation essay contest sponsored jointly by the National Grange and the American Plant Food Council.

Open to all young men and women under the age of 21, the contest offers $5,000 in cash prizes for the best 800 words or less dealing with building and maintaining soil fertility as it relates to profits, the community or the country.

Essays may be turned in to county agents, vo-ag teachers, Soil Conservation Service technicians, or to subordinate Grange lecturers, all of whom have at hand complete contest details and directions. The deadline for essays to reach these people is March 31, 1955.

Top national cash award is $500, plus a free trip to the 89th annual meeting of the National Grange in Ohio next November. State winners, in addition to receiving a $50 prize, will be eligible for the six area prizes, which consist of an all-expense free trip to the Ohio meeting.

A corps of nationally renowned judges in the field of conservation, headed by Ezra Taft Benson, secretary of agriculture, will judge the essays.

Monsanto Dividend

ST. LOUIS—The board of directors of Monsanto Chemical Co. recently declared a regular quarterly dividend of 62½¢ a share on the company's common stock. It is payable March 15 to holders of record at the close of business Feb. 25. At the same time, a quarterly dividend of 96¼¢ per share was declared on the company's cumulative preference stock, series C, payable June 1 to holders of record at the close of business May 10, and which are outstanding from March 1 to May 31, inclusive.

BEHIND THE SCENES

(Continued from page 7)

st insecticide, again in custom built ecision apparatus.

Few materials look good enough o get a chance at small plot tests n the company farm. So after a ear of life our baby is lucky to be live. With all modern science can o, there is still a 98% infant mor- ality during the first year of its ife. Some $70,000 will be spent in ood and care of the baby during he first year of its life.

Now the patent people have heard bout our new baby. They like its ooks and take over on obtaining a irth certificate—cost $8,000!

The first few years are the hardest —and most expensive. At least four ears of field tests are needed. We now we can kill insects—the basic oxicity is there, but we need field ests to produce basic information or our development specialists and efinitive recommendations for farm- rs.

These are the problems of appli- ability:

1. Regionality in the methods of application and in the response.
2. Practicability under farm conditions and under farmer operations.
3. Profitability to the farmer.
4. Variability when applied under different farming conditions.
5. Comparability with materials already available to the farmer.

Such field testing over a four-year eriod can cost a half-million dollars. Unfortunately, we cannot wait until ve have these answers before we pend more money at home. We need o know how to manufacture in pilot lant and larger quantities. We need o know the toxicity to vertebrates nd the tolerable residues on plants. Before we can determine this we nust have an analytical method. We eed to know if it will give off-flavors n foods and how to formulate and ackage the product.

Next to the field tests in import- nce (and generally part of them) re the residue and flavor tests. After ne knows the order of toxicity and ow to analyze for the chemical, sep- rate determinations of residues and lavor are needed for each crop and ach application method, often for ach state. The bookkeeping alone on orrespondence, sampling, shipping, nd analysis is prodigious. Nearly 400,000 is spent in obtaining these esidue and flavor tests, in addition o $100,000 for analytical method re- earch, and $75,000 for toxicology ork.

Formulations can make a mediocre hemical highly effective, or can reck a good material. So two years' ork ($135,000) is typical before a ood set of formulations can be con- idently marketed.

All this time we are having meet- ngs; synthesis discussions with chem- sts, development meetings with agri- ultural economists, patent lawyers, anufacturing specialists, and sales xperts. And always travel to state nd federal experiment stations. robably this is not typical, but these orts of comments do turn up with ickening frequency in these early eetings.

A competitive company thought of our chemical baby ten years ago. The raw materials alone cost $2 a pound. The yield is only 32%. A plant would have to be built of titanium with solid gold knobs. The stuff eats hell out of the drums. Besides, if it won't kill anything but milkweed bugs and cockroaches, who would buy it? The only emulsifier that will work cost $11 a pound before the company quit making it seven years ago.

Our paternal pride gets another blow when the report comes back from the toxicology institute that maybe what we have is a rodenticide instead of an insecticide. Two days later, the analytical chemist tells us he can't figure out how to analyze for the stuff.

Then the lady in the home economics department at the state college who has been doing what she calls an "organoleptic analysis" tells us that potatoes that have gravy on them made from pork chops from hogs fed on garbage including carrot peelings from ground treated two years ago, taste like pineapples.

Along about this time we begin to hear talk about reorganization of agricultural research and development under new management. But we hang on for a couple years and just when our embarrassment becomes most acute, things begin to happen:

Those knobs don't have to be solid gold after all, they can just be gold plated. Iowa has a sudden outbreak of milkweed bugs; the competitive material was the cis-isomer form; our own is trans and ten times as active.

The analytical chemist finds a colorimetric reaction with the urine of pregnant mares that is sensitive to one part in ten billion. Our competitor's cockroach insecticide manufacturing plant blows up. The product can be shipped in non-returnable beer bottles. Some clumsy graduate student spilled pineapple juice in the gravy, which accounts for the bad flavor test.

But we are not yet in business. There is a little matter of state and federal registration. We have been sending regular reports on control, toxicity and residues to Washington and the state offices, but so far we have asked for and gotten only an experimental registration which allows us to sell experimental quantities for carefully controlled applications, the results of which have been recorded and duly reported.

Now we have a lot of real data and with confidence we can ask for the right to sell the new insecticide for specific purposes. We know it is dependable and efficient in use, how to handle it safely and are confident that when used according to directions, there will be no dangerous residues.

Let me just interject a few comments here on the Miller Bill which for the first time gives us in industry and you in advisory work, a new confidence in the orderly development of better, but possibly dangerous, chemicals.

Briefly, the Miller Bill provides for the early establishment of a tolerance on chemical additives. A panel of experts is available to the Food and Drug Administration to make recommendations relative to the tolerance. Industry has a workable procedure to seek a tolerance for its product, and the right of appeal to the courts if it doesn't like the tolerance set.

Every possible person affected by the legislation will be benefited. To the public, it means a far-reaching health measure, to the Federal Department of Health, Education and Welfare, it means a workable plan for setting safe tolerances on residues, and to the farmer, it brings confidence in the materials he uses and the acceptability of his produce. To us in industry, it means the mitigation of a tremendous burden of red tape which has certainly slowed us down and increased the cost of the development of new products.

I have outlined to you the behind-the-scenes biography of a typical new organic insecticide. Through synthesis and screening, patent, field testing, formulation, analytical, toxicity, residue and flavor studies and label registration, we have spent from four to six years and more than a million and a quarter dollars.

So far, we have talked largely about a typical insecticide and what goes into its development behind the scenes. At our Modesto (California) laboratory we have been especially interested in soil fumigants. Shell started putting anhydrous ammonia into the soil as a dry gas about 15 years ago. Ten years ago, Shell teste D-D, a liquid which could be injected into the soil to control nematodes. It too acted as a gas after evaporation. So we had a vision of lots of new chemicals which we could use in soil to control weeds, fungi and other pests.

From the beginning we worked hard on methods for testing chemicals in the soil. Now every chemical, even if it is not volatile, gets tested against nematodes, weeds and weed seeds, and several defferent kinds of fungi, all in soil. Out of this work has come CBP (chlorobromopropene) which is now being sold for control of soil fungi, allyl alcohol, a commercially available soil weed killer, and a dozen other new nematocides and fungicides that are being tested from coast to coast. Here are some of the things we can do with these chemicals:

Control various strawberry diseases such as Verticillium, black root rot and red stele. We can replant strawberries in soil that would not otherwise be usable. We can kill weed seeds in seed beds such as tobacco or lawn so that seedlings come up in a weed free soil, and can also increase yield and quality of field and greenhouse flowers such as chrysanthemums.

Nematodes on citrus, peach and probably other living trees can be controlled without injury; it is possible to use an effective nematocide and fungicide in the seed row in cotton at the rate of one gallon an acre; and we can increase emergence and yield of beans and peas by a fungicide applied in the seed row to control Rhizoctonia and Thielaviopsis.

There are a hundred or a thousand other places where a soil chemical will increase yield, reduce labor, or save a crop. Many of these are now under test in various parts of the world, using new chemicals especially developed for use in soil.

Below the surface of the soil is a whole new world of possibilities. Crop responses to favorable soil structure, microbiological balances, soil nutrients and their availability, and soil pest control, can be tremendous. We have had responses to some soil applications that lead us to wonder if we ever see completely healthy, uninhibited plant growth under normal agricultural practice.

Nor are we neglecting the plants above ground. Our research program includes much basic chemistry and biochemistry. From such fundamental thinking we are getting a constant stream of new chemicals for growth regulations, cotton defoliation, weed control, fungus control, systemic insecticides and miticides, residual control of flies and mosquitoes and other important uses.

Some of our interesting chemicals are passed on to other research workers to be tried for such varied applications as fish killing agents, for algae control, for chemical warfare agents, for cure of skin fungi, as anthelminics for man and animals, and even as food supplements.

The search is never-ending. New developments in crops and equipment, as well as new chemicals, make this one of the fastest growing phases of the industry.

Idaho Soil Tests

MOSCOW, IDAHO — More than 2,000 soil samples were analyzed in laboratories of Idaho county agents last year, according to Charles Painter, University of Idaho soils specialist.

New York Nematode Quarantine to Be Effective July 1

HICKSVILLE, N.Y. — Long Island potato growers will use paper bags instead of burlap bags for shipment of their produce when the New York State quarantine against spread of golden nematode goes into effect on July 1. This action followed a joint meeting of Connecticut and Long Island potato growers recently.

Prior to this action by Long Island growers, Connecticut potato farmers had been discussing the possibility of imposing a Connecticut quarantine, requiring paper bag packaging of Long Island potatoes shipped into the state. A Connecticut quarantine, however, would not have precluded the possibility that second-hand burlap bags originally used for Long Island shipping into other areas, might eventually reach Connecticut.

The action of the Connecticut committee in meeting directly with Long Island growers and finding such a satisfactory solution represents "a great favor to the potato industry of the whole nation," according to Henry B. Little, director of the Bureau of Plant Industry, New York Department of Agriculture and Markets.

CIPPERLY

(Continued from page 1)

culture, said, "efficiency on farms is becoming mandatory."

It is difficult to reconcile that statement with Sec. Benson's recognition of bushelage controls on wheat since such controls would apparently strike at such modern scientific farm practices as adequate use of plant food.

In 1954, speaking before the annual session of the National Fertilizer Assn., Sec. Benson said in part, "it is encouraging that you continue to increase your production and that farms continue to increase their use of plant food materials. Not only are we producing and using greater quantities, but the concentration of plant food in the total tonnage is going higher all the time. As you know, the department is doing research to help you maintain this trend toward a higher analysis product in the interest of economy and efficiency."

During the same week, appearing before the annual meeting of the American Plant Food Council, Mr. Benson said, "farming efficiency is many things. It is crops and soils, methods and men. It is machines and electric power. It is the use of adapted plant and seed varieties that will produce big yields and high quality crops. It is good rotations to help maintain and build soil fertility. It is protecting land against erosion. And it is the wise use of plant food—of fertilizers, of crop residues, of lime and other soil building aids."

Going further to compliment the plant food industry on its share of farm efficiency the secretary continued saying, "in the great plains application of 25 lb. nitrogen increased wheat yields in some areas by an average of ten bushels per acre. . . . Here are some facts which seem clear. . . . There is not an iota of sense in attempting to put a damper on progress in farming efficiency. It can't be done . . . not for long."

Now, however, his recognition of a bushelage control on wheat production would seem to reverse that philosophy. Unquestionably the secretary, facing a monumental problem of bringing wheat production in line with expected demand and at the same time disposing of the huge overhanging surplus, is reaching out in all directions for temporary expedients which will solve those problems.

Trade sources are hopeful that his request to his national commission is only evidence that he is leaving no stone unturned—even the most doubtful stones—so that when his department does present a crystallized program for wheat he can tell Congress with confidence that every aspect of the problem has been explored.

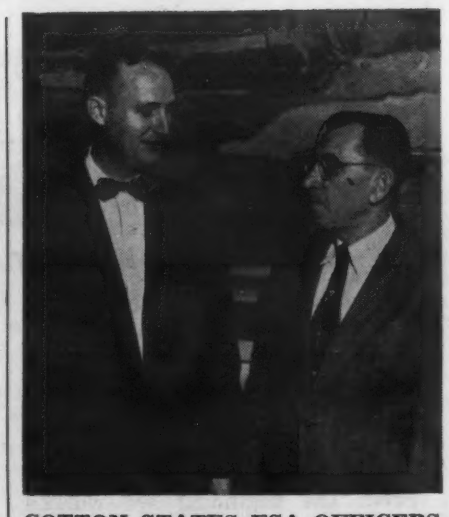
That Farm Bureau leader Charles Shuman has rejected the bushelage control basis flatly would appear to indicate that this approach to the problem will not gain headway in consequential farm circles.

Mr. Shuman said, briefly, that this type of control ignored the factor of efficiency in farm operations and that his organization would be opposed to this method of control.

He came out for cross-compliance in acreage control, a decision taken by Mr. Benson last year but subsequently reversed.

SOIL MEETING

FORT COLLINS, COL.—Continuing close cooperation between government agencies, private organizations and individuals keynoted the tenth annual meeting of the Colorado Association of Soil Conservation Districts, held in Denver recently. Speakers and panel members participating in the meeting stressed the importance of protecting topsoil we have and replenishing fertility lost through production of crops.



COTTON STATES ESA OFFICERS—Shown at the right is H. C. Young, U.S. Department of Agriculture, Florala, Ala., new chairman of the Cotton States Branch, Entomological Society of America. Shown in a Tampa (Fla.) Morning Tribune photo above is W. G. Eden, left, Alabama Agricultural Experiment Station, Auburn, secretary-treasurer, and A. N. Tissot, Florida Agricultural Experiment Station, Gainesville, vice chairman. They were named at the recent meeting of the group in Tampa. See Croplife, page 1, Jan. 24.

BREA PLANT

(Continued from page 1)

plant. It will produce approximately 50,000 tons per year of fertilizer grade ammonium nitrate.

Completion is scheduled for midsummer, 1955, according to Jack Tielrooy, Brea's manager of development, in charge of plant construction. Brea will be the largest western manufacturer of ammonium nitrate, the company said.

"Brea ammonium nitrate will be marketed to western growers," Mr. Reed said. "Ample warehousing will be provided to permit prompt delivery by truck or rail at time of application, even during peak seasons."

The new plant will be owned by Amoniaco Corp. and leased to Brea Chemicals, Inc., for operation. The contractors for the new plant are the Chemical & Industrial Corp., Cincinnati, which will supply the process units, and Macco Corp., Paramount, Cal., which will provide the off-site facilities and erect the entire plant.

The operation of the plant, bagging and warehouse facilities will provide employment for approximately 50 men.

The company said that its finished product will be "an improved form of uniform-size prills," packaged in 100-lb. lined multiwall bags.

The new plant will utilize part of the output of the Brea ammonia plant, most of which is distributed to western growers in the form of Brea aqua ammonia fertilizer solution.

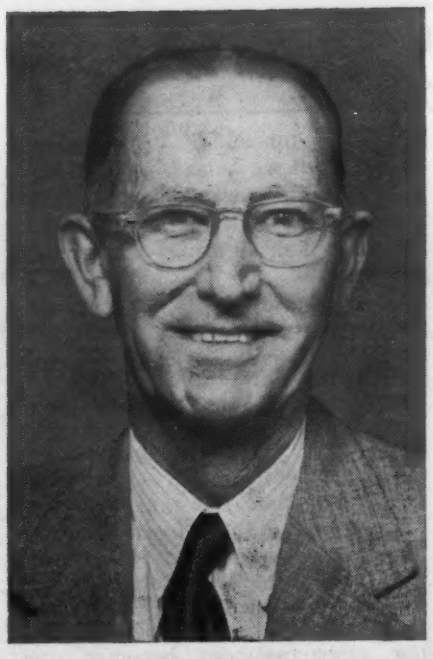
F. W. Copley to Retire From Bemis Position

ST. LOUIS—F. W. Copley, manager of the Buffalo plant and sales division of Bemis Bro. Bag Co. since 1923, has announced his retirement, effective March 31. He will be succeeded as manager by A. S. Roper, now assistant manager.

Mr. Copley joined Bemis in 1910 as a salesman at Kansas City, where he was made assistant manager in 1917. When the Buffalo plant was established in 1923 he became its first manager and has held this responsibility continuously since then.

SOIL FERTILITY DAY

LUBBOCK, TEXAS — Lubbock County Soil Fertility Day will be held here Feb. 22. Among the speakers in the tentative program is Dr. W. O. Trogdon, Olin Mathieson Chemical Corp., Houston, whose topic will be "Use of Fertilizer."



H. C. Young

AAI Executive Sees Big Increase In Anhydrous Use

MEMPHIS — Jack F. Criswell, executive vice president of the Agricultural Ammonia Institute, predicts that the farm market for synthetic nitrogen is large enough to use more than double present production by Jan. 1, 1957.

He made this prediction in an address before the Arkansas Agricultural Ammonia Dealers Assn. in Little Rock Feb. 7.

According to Mr. Criswell, anhydrous ammonia plants in operation, under construction, and proposed will help meet a national nitrogen goal of 3,500,000 tons by Jan. 1, 1957.

During the fertilizer year ending June 30, 1954, the nation's farmers used 1,637,000 tons of nitrogen.

In forecasting the increase in consumption of nitrogen fertilizer, Mr. Criswell noted that consumption of fertilizer nitrogen jumped from 62,000 short tons in 1900 to the 1,637,000 ton level for 1954.

"There are many who feel that the 2,000,000 ton mark will be reached in 1956, and a few who predict such a goal in even less time," he said.

He said that in 1950, four years after commercial acceptance of anhydrous ammonia for direct application, only 6 per cent of the nation's fertilizer nitrogen was put down as anhydrous ammonia. By 1954, he said that percentage climbed to 20 which was some 333,000 tons.

Mr. Criswell predicted that agricultural ammonia distribution would become more competitive and that close customer relations based on "both friendship and business ethics" will play a more important role in the future.

More Research on Effect of Pesticides Asked by Committee

WASHINGTON — The vegetable Research and Marketing Advisory Committee, meeting here Feb. 7-10, saw urgent need for expanding work to determine the direct and indirect effect of insecticides, fungicides and herbicides on soils, plants and animals.

Special attention should be given to residues in or on the edible portions of vegetables and to the effects of chemical composition and quality, the committee said.

Another principal recommendation of the committee was to continue to expand research on nematodes as a limiting factor in vegetable production.

TENNESSEE MEETINGS

(Continued from page 1)

moderate improvement in general farming practices, could "rather easily" meet a 50% increase in the demand for the agricultural products they grow.

"With more research and education, with better land use, this 50% increase will look very modest long before our population increases by 50%," he stated.

He also warned farmers, that for this reason, they cannot depend on population increases to solve automatically their surplus problems.

"Does this mean that farmers are therefore doomed to sort of a permanent farm depression?" Mr. Allstetter asked. "I don't think so. The solution lies, I believe, in the direction of improved farming efficiency—better breeds, better feeds, better seeds; more fertilizer more effectively utilized; better protection against crop losses; better utilization of land and of labor—all practices that reduce the cost of producing each bushel, each bale, each pound.

"This certainly is the surest method by which farmers individually and as a group can maintain their income while making the adjustments to limited demand and lower prices that seem to be in the picture for some years to come."

Mr. Allstetter presented figures to show that at recommended rates of fertilization, profit per bale of cotton produced in Tennessee could be increased on the average by 165%, as the result of a 47% increase in yields.

Consequently, Tennessee farmers could realize as much profit from 39 bales of cotton grown on only 39 acres as they presently realize from 68 bales of cotton grown on 100 acres, he explained.

"Somewhere between this 39 acres of high yielding cotton and 100 acres of cotton at average yields, we can meet market demand and raise farm income at the same time," he pointed out. Similar figures were presented for corn, wheat and tobacco showing that in each case total production could be reduced substantially without lowering farm income.

"These figures indicate that if we can somehow contrive to accelerate improvement in farming practices our farmers can meet adjustments in the farm market without harmful effects," he said. "It may be too much to hope that all farmers will move fast enough in this direction to avoid harm, but certainly it lies within the power of the individual farmer to do so."

Gilbert Owen, administrative assistant, Agricultural Conservation Program, reported that last year 77% of ACP allocations went to fertilizer and seed dealers for farmer payment of fertilizer and seed.

The ACP's cost-sharing plan should be thoroughly understood by all fertilizer dealers and farmers. Each, explained Mr. Owen, by working together can receive maximum benefits from the plan. "Local ACP officers will be glad to discuss the program with dealers," he added.

O. H. Long, University of Tennessee associate agronomist, reported that spring applications of nitrogen showed large increases in yields of oats. A split application, part in spring and part in fall, gave almost as good yields as spring applications, he said.

"Zinc fertilization of corn in the row at planting showed increased yields, according to recent tests," said Mr. Long. Zinc deficiencies are often found in high phosphate soils and seem to be associated with liberal applications of phosphate fertilizers and heavy liming, he said.

Plans for next year's meetings are already being made, according to Webster Pendergrass, chairman of the 1955 meetings.

CHEMICAL SALES

(Continued from page 1)

...and equivalent to about 10 percent ...reater than 1954.

Phosphorus and phosphatic chemi...als—Continued heavy demand as well as some increase in productive capacity.

Fertilizers—Total consumption of all fertilizers during the 1954-55 fertilizer year expected to exceed last year's; probably will establish a record peak this spring.

Pesticides — Increased production and use foreseen in view of new products.

Benzene — Outlook indicates a slight advance in output due chiefly to increased production by petroleum operators.

The anticipated uptrend in economic activity and additional markets resulting from the growing population promise increased sales for the drug industry. Antibiotics, for example, probably will top 1954 by some 10%.

Arkansas Seed Dealers Ask for Fee for Bollworm Control

LITTLE ROCK — The Arkansas Seed Dealers Assn. has adopted a resolution asking the Arkansas Legislature to apply an inspection fee to cotton and its products to finance a campaign for eradication of pink bollworms. The pest has been found in increasing numbers in the state during the past two years.

The association urged that the money not be taken from feed, seed and fertilizer inspection fees. The group also asked the legislature to appropriate $1,000,000 for agricultural research.

Bemis Appointment

ST. LOUIS—R. F. Allen has joined the staff of the Bemis Paper Control Laboratory, Boston, as laboratory supervisor and assistant to A. R. Ewing, laboratory head. Mr. Allen is a graduate of Lawrence College, Appleton, Wis., and attended a post-graduate course there at the Institute of Paper Chemistry.

Croplife®

A WEEKLY NEWSPAPER FOR THE FARM CHEMICAL INDUSTRY

The rotational circulation of this issue is concentrated in the Northeastern states.

Farm Progress Noted

Those attending the observance of Michigan State College's 100th anniversary at East Lansing, recently, heard some good down-to-earth comments from Ezra Taft Benson, Secretary of Agriculture, who was on the program. He started out by reviewing agricultural progress made over the past century, noting that "almost every decade in the past 100 years has brought greater changes than many centuries brought before 1850." Full credit was given by the secretary to education and research in bringing about these tremendous changes.

"This progress would have been impossible without a system such as the USDA-Land Grant college setup of producing knowledge and getting it to individual farmers," he observed.

The Secretary also had comments to make on the current economic problems facing agriculture today. "I would not minimize the seriousness of the cost-price squeeze," he said. "But I believe that most of the post-war adjustment has now been completed. The price parity index has been remarkably stable during the past year. It averaged 89% of parity in 1954, which is only 5 points below the level of January, 1953.

"It should also be noted that net income from agriculture in 1954 was slightly higher than in 1950. On a per capita basis, income from agriculture last year was 11 percent higher than in 1950.

"We are working our way out. The financial pangs which go with readjustment to a peacetime economy are not new to agriculture. We have endured them after every war in our history. But this time we are making the transition with fewer and less severe dislocations in agriculture and other parts of the economy than ever before.

"So long as we remain a growing, dynamic nation, we can afford to produce in abundance, and through research and education find profitable ways to use our bounty. Indeed, this is the only way we can continue to broaden our base of better living.

"We are not at the end of the road, but only at the beginning. Even now American farmers could increase acreage yields considerably by adopting tested improved practices, including the use of sufficient fertilizer, insecticides, and other methods.

"We have in the past century leaped ahead through research and education. What amazing results could we reasonably expect by giving to these twin agents of a better future the emphasis that wisdom would seem to dictate!

"The total annual expenditure by government—Federal and State—on soils research in recent years has been about the same as the cost of a B-36 bomber—and less than one-fourth the cost of a destroyer.

"This fiscal year we are spending for all publicly supported agricultural research—again State and Federal—$143 million. Do we realize that the estimated annual losses from cattle diseases alone amount to roughly five times that figure?

"Yet even with limited funds, we have learned for some crops how to gear production practices together with mathematical precision. We need this type of information for each important crop under different climatic conditions, on various soils, at particular moisture levels.

"The basic long-range needs of American agriculture are to reduce per unit costs, to improve quality and to expand markets. The sound approach to every one of these needs is primarily through research and education," he declared.

Mr. Benson has hit on a lot of truths in his Michigan talk. Many of them have been uttered before, but all are of the type that bear repeating for emphasis. The agricultural chemical trade, as the secretary points out, has a tremendous responsibility which it is carrying out well. The tough part is that of keeping our perspective amidst changing scenery.

Comments on Dealers

The recent questionnaire sent out by Croplife to the fertilizer trade brought about some interesting side remarks particularly with regard to the need for dealer education. Many respondents indicated that they considered the dealer perfectly willing to sell, but pictured him as being handicapped by a lack of knowledge of the technical side of products such as fertilizers and pesticides.

Here are some of the remarks found in the space set aside for "comments" in the questionnaire:

"Dealers need help in merchandising and selling fertilizer materials. They are missing many good 'bets' to sell fertilizer to the farmer. Making better use of demonstration plots or test strips, showing dramatic results of using fertilizer adequately, as compared to check plots, would help them immeasurably. So would field trips, attractive displays and a better knowledge of their subject. . . . Too often, farmers just buy fertilizer, rather than having it sold to them."

Another fertilizer manufacturer observes that "Dealers need help. They are the No. 1 problem in fertilizer sales. No one has yet come up with any sure-fire ideas on selling. I think mixers must bolster up dealer effort by direct education of the good farmers in the dealer's area, with their own sales force in the off-season."

Not all the comments were critical. One manufacturer reports that his firm supplies information on fertilizer terminology through its office and salesmen and that most of the dealers in this vicinity (Pennsylvania) are "fairly well abreast with the situation." If new situations arise, dealers are urged to contact the fertilizer company, its field agronomists, or salesmen, any of whom may supply a good answer.

Another manufacturer, located in the lower middlewest, hits at the usual distribution bottleneck which comes each spring. "The most important thing the dealer can do, is to get farmers to take part, at least, of their fertilizer early. The total tonnage in this area may be off a little, but there will still be a big problem to ship 90% of the spring tonnage from March 1 to May 15th."

An optimistic viewpoint is seen in this comment: "Dealers are becoming educated more rapidly this year than I believed possible three years ago—and current farm periodicals are helping the farmer with his technical problems, too. Though we have a long way to go, progress is satisfying."

A careful note was sounded in the reply of one cautious questionnaire answerer. He said he didn't see how one could comment much along this line "without stepping on someone's toes."

We know that it is entirely possible to ruffle feathers of people innocently, but we seldom fear that someone's toes will be trampled on when it comes to pointing out new and better ways of merchandising and making additional profits. That's why we bring up the subject here. It's all for the sake of better living.

CROPLIFE is a controlled circulation journal mailed to those responsible for the production and distribution of fertilizer and other farm chemicals and to retail dealers of the agricultural chemical industry in the U.S. To those not on the controlled list, CROPLIFE is available at $5 for one year, $9 for two years ($8 a year outside the U.S. and possessions). Single copy price, 25¢.

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MEETING MEMOS

Feb. 23-25 — Tenth Annual Meeting of Midwestern Chapter, National Shade Tree Conference, Chase Hotel, St. Louis, N. B. Wysong, Cook County Forest Preserve, 536 N. Harlem Ave., River Forest, Ill., secretary-treasurer.

Feb. 23-25 — Fourth Annual Ohio-Indiana Agricultural Aviation Conference, Union Bldg., Purdue University, Lafayette, Ind.

Feb. 28-March 1—Fertilizer Section, Southern Safety Conference, Jung Hotel, New Orleans, Curtis A. Cox, Virginia - Carolina Chemical Co., Richmond, Va., Chairman.

March 1-2—Second Annual Missouri Aerial Spray Applicators Short Course, Memorial Student Union, University of Missouri, Columbia.

March 3-9—Idaho Plant Food Meetings, Sponsored by the University of Idaho; Couer d'Alene, March 3; Lewiston, March 4; Boise, March 7; Twin Falls, March 8; Idaho Falls, March 9.

March 7-9 — National Agricultural Chemicals Assn., Spring Meeting, Chase and Park Plaza hotels, St. Louis. Lea S. Hitchner, Associations Bldg., 1145 19th St. N.W., Washington, D.C., Executive Secretary.

March 8-9—Western Cotton Production Conference, Hotel Westward Ho, Phoenix, Ariz.; National Cotton Council, P.O. Box 18, Memphis 1, Tenn.

March 14-15 — National Nitrogen Solutions Assn., First Annual Meeting, Paxton Hotel, Omaha, Wayne R. Johnson, Box 163, Shenandoah, Iowa, president.

March 22-24—National Farm Chemurgic Council, Inc., Annual Conference, Deshler-Hilton Hotel, Columbus, Ohio; John W. Ticknor, NFCC, 350 Fifth Ave., New York, conference chairman.

March 24-25—North Central States Branch, Entomological Society of America, East Lansing, Mich.

Apr. 26 — Third Annual California Fertilizer Conference, sponsored by the Soil Committee, California Fertilizer Assn., University of California, College of Agriculture, Davis, Cal., Sidney H. Bierly, Executive Secretary, CFA, 475 Huntington Drive, San Marino, Cal.

May 19—Fertilizer Section, 25th Annual North Carolina Safety Conference, Robert E. Lee Hotel, Winston Salem, N.C.; William C. Creel, Safety Director, Department of Labor, State of North Carolina, Raleigh, Chairman.

June 2 — South Carolina Fertilizer Meeting, Sandhill Experiment Station, near Columbia, S.C.

June 3—Fertilizer Section, Virginia State Safety Association, Jefferson Hotel, Richmond, Va.; William C. Richardson Southern States Cooperative, Richmond, Chairman.

June 12-15—Joint meeting, American Plant Food Council, Inc. and National Fertilizer Association, Greenbrier Hotel, White Sulphur Springs, W.Va. Paul T. Truitt, American Plant Food Council, 910 17th St. N.W., Washington, D.C., in charge of registration.

June 28-30 — Sixth Annual Pacific Northwest Plant Food Assn. Regional Fertilizer Conference, Boise Hotel, Boise, Idaho, Leon S. Jackson, 702 Lewis Bldg., Portland, Ore., secretary.

Aug. 15-19 — American Society of Agronomy and Soil Science Society of America, University of California, Davis Campus.

Sept. 7-9 — Ninth Annual Beltwide Cotton Mechanization Conference, Texas A&M College, National Cotton Council of America, Box 18, Memphis 1, Tenn.

Oct. 17-18 — Fertilizer Section, National Safety Congress, LaSalle Hotel, Chicago, Thomas J. Clarke, Chairman.

Nov. 2-3 — Annual Convention, Pacific Northwest Plant Food Assn., Pilot Butte Inn, Bend Ore., Leon S. Jackson, 702 Lewis Bldg., Portland, Ore., Secretary.

Nov. 7-8—California Fertilizer Assn., Thirty Second Annual Convention, Hotel Mark Hopkins, San Francisco, Sidney H. Bierly, Executive Secretary & Manager, 475 Huntington Drive, San Marino, Cal.

Dec. 5-7—Agricultural Ammonia Institute, Kansas City; Jack F. Criswell, Executive Vice President, Claridge Hotel, Memphis, Tenn.

172,000 Spruce Trees Treated in Colorado

DENVER—A total of 172,117 trees in southwestern Colorado were treated last year by the U.S. Forest Service in the battle against the Engelmann spruce bark beetle which has killed 70 million board feet and threatens an additional 4 billion board feet of timber in the state.

Cost of the 1954 beetle control project in the San Juan and Uncompahgre national forests was set at $646,852 by Donald E. Clark, Rocky Mountain regional forester.

He said about 303,000 trees must be chemically treated this year if the epidemic is to be confined to the present infested stands.

New Kansas Firm

ALLIANCE, NEB. — Incorporation papers have been filed by Western Fertilizer and Cordage Co. here, which will sell nitrogen solution fertilizer in the Alliance trade area. The firm, incorporated by Mr. and Mrs. Gordon Keeley and Roger C. Crum, plans to install a 22,000 gal. tank soon and a warehouse later. Mr. Keeley is president of the Alliance Tractor and Implement Co.

New York FFA Projects Increase 50%

ITHACA, N.Y. — Participation in the Crop Demonstration Program conducted by New York FFA chapters increased 50% in its second year, G.L.F. officials said in announcing sixteen top winners for last year. Ninety chapters submitted plans, while 49 filed final reports. Local G.L.F. service agencies provided seed, fertilizer and other materials.

The group projects afford FFA chapters an opportunity to demonstrate newer crop raising methods and varieties. Selection of winners is based on a written plan, field visits by a special committee and a final written report. The committee visited 76 projects last year.

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Croplife

FOR RICHER FIELDS

PUBLISHED EVERY MONDAY

A WEEKLY NEWSPAPER FOR THE TWO BILLION DOLLAR AGRICULTURAL CHEMICAL INDUSTRY

Vol. 1 — AUGUST 23, 1954 — No. 31

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Impact of Farm Law on Industry Hinges on Diverted Acre Policy

Fall Fertilization, Need for Balanced Fertility Stressed at Wisconsin Ammonia Meeting

Eagle-Picher Sulfuric Acid Unit Starts Up

Compliance Deadline Near for Kentucky Law

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Minnesota Armyworm Campaign Saves $40 Million

DIRECT, PLANT DISEASE NOTES

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Serving the Agricultural Chemical Industry . . .

Croplife is the weekly *news*paper for all phases of the industry from the manufacturers of basic chemicals down the production and distribution chain through the retail dealers. Croplife reaches *all* the key men in the industry. These groups are reading Croplife:

- **Fertilizer manufacturers, mixers and suppliers of fertilizer ingredients**
- **Formulators of Pesticides, Herbicides and other Farm Chemicals**
- **Retail Dealers selling fertilizer, farm chemicals and other farm supplies; Custom Sprayers, Pest Control Operators, and Nurserymen**
- **Farm Advisor Group—county agents, agriculture department officials, extension and experiment station personnel, soil conservation men, bankers and consultants**

Croplife, with a publishing schedule every 168 hours, is reporting news to the industry while it's still news! A staff of 21 crack newsmen in key U.S. cities and backed by 100 special correspondents provides the stop-press coverage of the industry required by readers who make the command decisions.

Croplife's unique distribution plan permits advertising (1) on the national level to the manufacturing core of the industry, and (2) on the regional crop-area basis to the distribution segment of the market. Ask a Croplife representative to elaborate on this in terms of your product!

Your advertisement in Croplife will share the *impact* and *import* of Croplife as it reports weekly to the men who create action in the agricultural chemical field.

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